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Resource Management Plan and Environmental Impact Statement for the Casper Field Office Planning Area



Volume 2 of 2
Appendices, Glossary, and Maps

July 2006

BLM
Wyoming State Office - Casper Field Office

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Volume 2 of 2

Draft
Resource Management Plan and Environmental Impact Statement for the Casper Field Office Planning Area

Appendices, Glossary, and Maps

U.S. Department of the Interior
Bureau of Land Management
Casper Field Office, Wyoming

July 2006

VOLUME 2
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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX A

Split-Estate Lands

Appendix A
Split-Estate Lands

OVERVIEW

In Wyoming, the Bureau of Land Management (BLM) manages approximately 11.6-million acres of federal minerals under private surface (referred to as split-estate lands), of which, approximately 2.8-million acres lie within the Casper planning area. The majority of this split-estate land was patented under the Stock Raising Homestead Act (SRHA) of December 29, 1916, as amended, (43 United States Code [U.S.C.] § 299).

By the late 1800s, much of the public domain lands had been transferred to private ownership either by sale or by homesteading. The 1882 annual report from the General Land Office pointed out that during the 1800s, companies had fraudulently acquired great quantities of valuable coal and other lands. In response to this and subsequent investigations, President Theodore Roosevelt, in 1906, withdrew more than 66-million acres of coal lands from settlement and location. Congress questioned whether the President had authority to do this. In 1910, Congress passed the General Withdrawal or Pickett Act, giving the President power to "temporarily" withdraw public lands from settlement and location for public purposes.

In response to the uproar that this created among politicians, business people, and homesteaders, President Roosevelt signed the Act of March 3, 1909 (30 U.S.C. § 81), which allowed homesteaders who had settled coal lands to patent those lands, as long as the coal was reserved to the United States. The Act of June 22, 1910 (30 U.S.C. § 83), permitted homesteaders to file for coal lands, as long as the coal was reserved to the United States.

The mineral policies were extended to reserving portions or, in most cases, the full mineral estate to the United States by the Act of July 17, 1914 (30 U.S.C. § 121, 122). That Act opened lands that were withdrawn or classified for phosphate, nitrate, potash, oil, gas, or asphalt minerals, or allowed those deposits entry under the appropriate Homestead Acts (HA). Finally, the SRHA reserved all minerals to the United States.

As part of the mineral policies initiated during his Presidency, Theodore Roosevelt had advocated a leasing policy for coal and petroleum lands, but Congress resisted the idea. In 1917, potassium deposits could be leased with the enactment of the Potash Leasing Act, which passed because potassium was essential to America's production of military explosives during World War I. After numerous proposals and much heated debate in Congress, the Mineral Leasing Act (30 U.S.C.§ 181 et seq.) was adopted in 1920 and extended leasing to coal, petroleum, natural gas, sodium, phosphate, oil shale, and gilsonite. Under the appropriate provisions and authorities of the Mineral Leasing Act, individuals and companies could prospect for and develop the minerals associated with the Act.

Discussed in this appendix is what authority the BLM has to condition and regulate federally authorized leases, specifically oil and gas, on split-estate lands and the policy and guidance used to accomplish this.

The BLM is mandated by the Federal Land Policy and Management Act (FLPMA) of 1976, Section 202, to develop, maintain, and revise land use plans on public lands, where appropriate, using and observing the principles of multiple use and sustained yield. Section 103(e) of the FLPMA defines public lands as any lands and interest in lands owned by the United States. The mineral estate is an interest owned by the

United States. The BLM has an obligation to address this interest in their planning documents (43 CFR 1601.0-7(b); Bureau Manual 1601.09).

The FLPMA is intrinsically tied to the mandate provided by the National Environmental Policy Act (NEPA) of 1969. Specifically, Section 102 of NEPA states, "Congress authorizes and directs the federal government and its agencies to use a systematic interdisciplinary approach which insures the integrated use of the natural and social sciences and the design arts in planning and decisionmaking where man has an impact on man's environment." This theme is also present in Section 202(c)(2) of the FLPMA where, as with NEPA, it recognizes that management of the public lands and resources and the consequences associated with their use or consumption are tied to biologic, ecologic, social, and economic boundaries, not merely surface boundaries.

Through the years, from the planning stage through development of the mineral estate, two areas of concern have consistently arisen from this split-estate land issue: Does the BLM have the statutory authority to regulate how private surface owners use their property, and does the BLM have the authority to condition and regulate a federal mineral development, such as federal oil and gas leases. These two concerns have been addressed in the resolution of two resource management plan (RMP) protests in 1988 on split-estate lands (North Dakota RMP and Little Snake RMP) and two Washington Solicitor's Opinions (April 1 and 4, 1988). The conclusion states,

> In summary, while the BLM does not have the legal authority in split-estate situations to regulate how a surface owner manages his or her property, the agency does have the statutory authority to take reasonable measures to avoid or minimize adverse environmental impacts that may result from federally authorized mineral lease activity.

An example of the authority the BLM does have, is summarized in the January 7, 1992, Interior Board of Land Appeals (IBLA) Decision (122 IBLA 36, Glen Morgan, January 7, 1992), which states that "The operator of an oil and gas lease is responsible for reclamation of land leased for oil and gas purposes, even after expiration of the lease and even where the surface estate is privately owned. Such reclamation includes the restoration of any area within the lease boundaries disturbed by lease operations to the condition in which it was found prior to surface- disturbing activities." Another key point presented in this IBLA decision referenced the reservation of mineral reserves under section 9 of the SRHA. This section states that the United States reserves the "right to prospect for, mine, and remove the [reserved minerals]," which right encompasses "all purposes reasonable incident to the mining or removal of the coal or other minerals" (43 USC §299, 1988). As long interpreted by the U.S. Department of the Interior (USDI), such purposes include reclamation of the surface of the impacted land after mining is complete and the minerals are removed.

AUTHORITY

The Mineral Leasing Act of 1920

The Mineral Leasing Act (MLA), as amended (30 U.S.C. §§ 181-287), and its implementing regulations established the BLM's authority to lease and produce federal minerals. The restrictions identified through the planning process and attached to federal oil and gas leases constitute a legal contract between the lessee and the BLM. No other party can change that contract without the expressed consent of the authorized officer. The authorized officer may waive, modify, or amend lease conditions as site-specific analysis dictates.

The section of the MLA that specifically refers to the regulation of surface-disturbing activities on oil and gas-leased lands is found in 30 U.S.C. § 226(g), 1988. The key statement which does not distinguish between public surface and split-estate surface, but applies to all leases follows, "The Secretary of Interior, or for the National Forest lands, the Secretary of Agriculture, shall regulate all surface-disturbing activities conducted pursuant to any lease issued under this chapter, and shall determine reclamation and other actions as required in the interest of conservation of the surface resources."

It has been cited that Onshore Oil and Gas Order #1 of 1983, "Approval of Operations on Onshore Federal Land and Indian Oil and Gas Leases," is the final resolution to the split-estate mineral issue. The order has sometimes been interpreted to mean that the BLM has waived all or many of its responsibilities during the development of federal oil and gas where split-estate lands is involved. The order does not rescind or revoke any of the laws or regulations including the MLA that inspired it. Furthermore, this order cannot revoke any other BLM responsibility or obligation specified elsewhere in laws or regulations, again including the MLA.

The following laws and executive orders are in addition to the MLA and pertain to split-estate federal mineral authorizations. They are not all-inclusive; new laws and amendments are passed frequently.

Federal Land Policy and Management Act of 1976

The BLM is responsible for both considering the impacts of its actions and approvals in land use planning, as well as for managing those impacts for public lands. Public land to be considered for split-estate land is the mineral interest and not the surface. The private surface is not public land; thus, it is not subject to the planning and management requirements of the FLPMA. The BLM has no authority over use of the surface by the surface owner. The BLM is required to declare how the federal mineral estate will be managed in the RMP, including identification of all appropriate lease stipulations (43 CFR 3101.1; BLM Manual Handbook, H-1624-1, IV.C.2). To be consistent with the requirements of the FLPMA, it is necessary to apply the same standards for environmental protection of split-estate lands as applied to the federal surface (BLM Manual 3101.91 B.1). The FLPMA also provides in Section 202 that the BLM "...shall provide for compliance with applicable pollution control laws, including state and federal air, water, noise, or other pollution standards of implemented plans." Many of these laws are addressed later in this document.

National Environmental Policy Act of 1969

The BLM's responsibilities for split-estate lands under the NEPA are basically the same as for federal surface. Even though the impacts will occur on private surface, the BLM is still responsible for considering alternatives or imposing protective measures since the impacts will be caused as a direct consequence of activities approved by the BLM and conducted pursuant to a federal action. Mitigation measures for impacts identified during the NEPA analysis may be imposed under the general authority set out in Sections 30 and 37 of the MLA of 1920 (30 U.S.C. §§ 187 and 193) and the policy of the FLPMA. Other statutes that could apply for taking reasonable measures to avoid or minimize adverse environmental impacts that may result from federally authorized mineral lease activities include the Clean Water Act (CWA) of 1977, the Clean Air Act (CAA), the National Historic Preservation Act (NHPA), the Endangered Species Act (ESA) of 1973, and the Federal Onshore Control and Reclamation Act (FOCRA) of 1987. The FOCRA specifically requires the BLM to regulate surface disturbance and reclamation on all leases. With respect to offsite impacts, which also could include off-lease, off-unit, or off-the-original split-estate patent boundary, mitigation must be considered and met in order to approve a lease action, lands regardless of whether the surface is private or federal. The legal jurisdictional boundary (the lease

boundary) and access to such will be discussed in more detail later in this appendix under the heading "Access to Split-Estate Lands To Develop Federally Owned Minerals." Before leasing the mineral estate or approving lease development, the BLM determines whether that action would impact the quality of the human environment regardless of surface ownership. In this analysis, the BLM considers all impacts of the proposed action, whether those impacts are to surface resources, to use of the land by the surface owners, or to the subsurface. The BLM also takes into account the views of the surface owners and what impacts implementing the mitigation measures for lease activity would have on their uses of the surface.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires the BLM to consider the impacts of its actions on historic properties and to seek comments from the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (BLM Manual Section 8143.06). In fact, federal agencies are required to take into account the impact of any federally assisted or federally licensed undertaking on properties included on, or eligible for inclusion on, the National Register of Historic Places (NRHP). These responsibilities are the same on split-estate land as on public land (BLM Manual 3101.9). The 1992 amendments to the NHPA replaced the definition of "undertaking" in Section 301 of the Act as follows:

"Undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including:

- Those carried out by or on behalf of the agency
- Those carried out with federal financial assistance
- Those requiring a federal permit, license, or approval
- Those subject to state and local regulation administered pursuant to a delegation or approval by a federal agency."

If activities to be conducted on split-estate lands under the terms and conditions of a federal oil and gas lease would result in adverse impacts to historic properties, the BLM has the authority to impose appropriate avoidance or mitigation measures. Currently, the BLM authorized officer consults with the SHPO to identify and evaluate historic properties that might be impacted, to assess impacts, and to determine satisfactory means for avoiding or mitigating adverse impacts. The Advisory Council on Historic Preservation is then given the opportunity to comment only if listed or eligible properties would be impacted. This process is explained in more detail in a current agreement among the Advisory Council, SHPO, and the BLM (regulation guidance is found in 36 CFR 800).

The BLM Manual 8100 (including the Wyoming manual supplements) contains guidance, policy, and the extent to which the BLM is responsible for split-estate land. It also indicates direction when access is denied to an operator or BLM personnel in determining impacts pursuant to the NHPA. Key points in the manual are that (1) any historic properties encountered belong to the landowner and if the landowner wishes, any cultural material removed from the property should be returned after study; (2) the authorized officer must consider alternatives if the landowner continues to refuse access for cultural resource work, including the feasibility of relocating the project; and, (3) the authorized officer also may consider approval or denial of the application without the cultural resource information. The other avenue for access is by way of the courts and is addressed under "Access to Develop Federally Owned Minerals."

Endangered Species Act of 1973

Section 7 of the Endangered Species Act (ESA) requires federal agencies, in consultation with the Secretary (currently delegated to the U.S. Fish and Wildlife Service [USFWS]), to ensure that no action authorized, funded, or carried out by an agency is likely to jeopardize the continued existence of a threatened or endangered species, whether plant or wildlife, or would result in the destruction or adverse modification of critical habitats. The ESA requirements apply to oil and gas leasing and operations on split-estate lands, just as they do to federal lands (Onshore Order No. 1; 43 CFR 3164.1).

A proposed surface-disturbing federally related action cannot and must not be approved until all applicable federal statutory requirements have been met.

OTHER STATUTES AND EXECUTIVE ORDERS

Clean Water Act of 1977, As Amended

The Federal Water Pollution Control Act Amendments of 1972, as amended in 1977, became commonly known as the Clean Water Act (CWA). The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave U.S. Environmental Policy Act (EPA) the authority to implement pollution control programs, such as setting wastewater standards for industry. The CWA also continued requirements to set water quality standards for all contaminants in surface waters. The Act made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.

The CWA is the cornerstone of surface water quality protection in the United States. The statute employs a variety of regulatory and nonregulatory tools to sharply reduce direct pollutant discharges into waterways. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

In accordance with recent revisions to Chapter 2 of the Wyoming Water Quality Rules and Regulations the state program name, the National Pollutant Discharge Elimination System (NPDES), has been changed to the Wyoming Pollutant Discharge Elimination System (WYPDES). This change clarifies that the Department of Environmental Quality (DEQ) is the permitting authority within Wyoming. However, NPDES permits will continue to be issued for pre-treatment discharges and within areas of the Wind River Reservation where the EPA remains the permitting authority.

In 1990 the EPA published regulations requiring all storm water discharges associated with industrial facilities to obtain storm water discharge permits. In Wyoming, where the DEQ is the permitting authority, Chapter 2, Section 6, of the Wyoming Water Quality Rules and Regulations requires permits for storm water discharges from all construction activities disturbing 1 or more acres. The type of facility being constructed does not change the requirement to obtain permit coverage. As such, construction of oil and gas facilities requires storm water permits in the State of Wyoming.

Section 404 of the CWA requires approval prior to discharging dredged or fill material into waters of the United States, including wetlands. Any person or entity (including federal, state, and local government agencies) planning to work in waters of the United States, or dump or place dredged or fill material in waters of the United States, must first obtain a permit from the Corps of Engineers. Other federal, state, and local statues also may require permits, licenses, variances, or similar authorization. Prior to issuing a

permit, the Corps must be presented with a certification from the state that the proposed project will not result in a violation of the state's water quality standards. This is referred to as a CWA Section 401 certification and is provided by the Wyoming DEQ, Water Quality Division.

Further information on the CWA can be accessed at the following two web sites:

- http://deq.state.wy.us/wqd/
- http://www.epa.gov/region5/water/cwa.htm.

Clean Air Act of 1955, As Amended

The Clean Air Act (CAA) states that the BLM and its permitted actions must comply with national and state air quality standards. The CAA also directs the BLM to cooperate with states in carrying out their implemented plans. The Act further provides for the prevention of deterioration of air quality and places responsibility on the BLM for the protection and, in certain cases, the enhancement of air quality and air-related values, including visibility.

Executive Order 11988 of 1977, "Floodplain Management"

This Executive Order (EO) states that "direct or indirect support of floodplain development must be avoided whenever there is a practical alternative." The BLM Manual 7221 states that "Long and short-term adverse impacts on natural and beneficial floodplains functions associated with the use and modification of floodplains must be avoided, to the extent possible; and actions causing definable adverse impacts (long or short-term) to the natural and beneficial floodplain functions must include protection, minimization of damage, restoration, and preservation measures." The 1979 manual guidance is somewhat outdated, as it refers to unit resource analysis (URA), a management framework plan (MFP), and some BLM planning and environmental assessment guidance more recently updated, but the basic processes and guidance are still applicable. The resource area plans do not contain floodplain identification. The guidance refers to the appropriate official (BLM hydrologist) to identify the base (100-year chance of a flood) and (or) critical (500-year chance of a flood) floodplain in relation to the location of the proposed action. This identification must extend upstream and downstream beyond the boundaries of the proposed action far enough to permit an analysis of the impacts that the proposal may have on the floodplain functions beyond the project boundary. Also, the public must be afforded an opportunity to be involved in the decisionmaking process for all actions within a floodplain or that may impact it. The difference in restrictions for addressing proposed actions within base versus critical floodplains is somewhat lacking. However, for actions within base floodplains, the BLM will make a determination whether the proposed action will be located there. In critical floodplains, only critical actions will be identified and analyzed according to the BLM environmental assessment process. Oil and gas activity, especially that which involves major surface-disturbing activity, qualifies as critical action and should be assessed appropriately within a critical floodplain. The guidance does not state that the BLM cannot authorize actions within floodplains, but it does state that mitigation and restoration measures must be completed for each alternative considered.

Executive Order 11990 of 1977, "Protection of Wetlands"

This Executive Order (EO) directs federal agencies to take action to minimize the destruction, loss, or degradation of wetlands. All federally initiated, financed, or permitted construction projects in wetlands must include all practical measures to minimize adverse impacts. Section 404 of the CWA (discussed above) is one of the permit processes to protect or minimize adverse impacts to wetlands.

Eagle Protection Act of 1940

This act prohibits persons from taking any golden or bald eagles or nests of such birds. Taking, as defined under this statute, includes molesting or disturbing. Violation of the prohibition in 16 U.S.C.§§ 668-668d is a criminal violation, regardless of where the activity occurs, whether on public land, National Forest lands, or private-lands.

Resource Conservation and Recovery Act of 1976, As Amended

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 as an amendment to the Solid Waste Disposal Act. The primary objectives of RCRA are to protect human health and the environment and to conserve valuable material and energy resources. The most important aspect of RCRA is its establishment of "cradle-to-grave" management and tracking of hazardous waste, from generator to transporter to treatment, storage, and disposal. Other aspects of RCRA include the development of solid waste management plans, prohibition of open dumping, encouragement of recycling, reuse and treatment of hazardous wastes, and establishment of guidelines for solid waste management. Generally, E&P exempt wastes are generated in primary field operations and not as a result of transportation or maintenance activities. When listed nonexempt and exempt wastes are mixed, the entire mixture could be considered a hazardous waste. For example, discarding a half-empty listed solvent into a reserve pit could cause the otherwise exempt reserve pit contents to become a hazardous waste. This may result in closure of a reserve pit under RCRA hazardous wastes regulations.

The amendment to RCRA also mandated the EPA to study exploration and production (E&P) wastes and recommend appropriate regulatory action to Congress. The EPA conducted the study and submitted a Report to Congress on December 28, 1987. This regulatory determination was made public on June 30, 1988. A key portion of this determination follows:

"The Agency plans a three-pronged approach toward filling gaps in existing state and federal regulatory programs by:

1. Improving federal programs under existing authorities in Subtitle D of RCRA, the Clean Water Act, and the Safe Drinking Water Act;
2. Working with states to encourage changes in their regulations and enforcement to improve some programs; and,
3. Working with Congress to develop any additional statutory authority that may be required."

Some of the reasons put forth by the EPA for this determination follow:

- "Subtitle C does not provide sufficient flexibility to consider the costs and avoid the serious economic impacts that regulation would create for the industry's exploration and production operations;
- Existing state and federal regulatory programs are generally adequate for controlling oil, gas, and geothermal wastes. Regulatory gaps in the Clean Water Act, and Underground Injection Control (UIC) program are already being addressed, and the remaining gaps in state and federal regulatory programs can be effectively addressed by formulating requirements under Subtitle D of RCRA and by working with the states; and
- It is impractical and inefficient to implement Subtitle C for all or some of these wastes because permitting burden that the regulatory agencies would incur if even a small percentage of these sites were considered Treatment, Storage, and Disposal Facilities (TSDFs) (53 FR 25456, July 6, 1988)."

The Interstate Oil and Gas Compact Commission (IOGCC) is an organization that includes governors of the 29 oil- and gas-producing states. The IOGCC has been assisting states in developing their oil and gas regulatory programs since 1935. In January 1989, the IOGCC formed a council on regulatory needs to assist the EPA in its three-pronged approach to fill the gaps in regulations. This council comprises of 12 state regulatory agency members and is supported by a 9-member advisory committee made up of representatives from state regulatory agencies, industry, and public interest and environmental groups. This council also is assisted by representatives from the EPA, the U.S. Department of Energy (DOE), and the BLM, all of whom act as official observers.

The purpose of the IOGCC council is to recommend effective regulations, guidelines, and standards for state-level management of E&P wastes. It is not intended to form the sole basis for any future federal statutory or regulatory authorities that may be sought by the EPA for E&P wastes. In 1990, the IOGCC adopted guidelines in the form of technical and administrative criteria recommended by the council and advisory committee. This publication, *EPA/IOGCC Study of State Regulation of Oil and Gas Exploration and Production Wastes* commonly is known as the "IOGCC Guidelines" or the "Green Book." These guidelines were updated in May 1994 with a revised publication titled *IOGCC Environmental Guidelines for State Oil & Gas Regulatory Programs.*

The USDI has the following fundamental principles of waste management:

"Wherever feasible, we will seek to **prevent** the generation and acquisition of hazardous wastes; where waste generation is unavoidable, we will work to **reduce** the amounts (toxicity or risk) generated through the use of sound waste management practices; we will **manage** waste materials responsibly in order to protect not only the natural resources entrusted to us, but the many people who live and work on our public lands, and the millions more who enjoy our lands and facilities each year; we will move aggressively to **clean up and restore** areas under our care that are contaminated by pollution."

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, As Amended

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. § 9601) is a public law (P.L. 96-105, as amended through P.L. 107-377) enacted by Congress in 1980 to facilitate the cleanup of sites where there had been a release or the threat of release of hazardous substances. The law was amended substantially in 1986 with the enactment of the Superfund Amendments and Reauthorization Act (SARA). The primary purpose of SARA is to expedite the pace of CERCLA response actions and cleanups.

Section 104 of CERCLA provides broad federal authority to respond directly to such releases or threat of release of hazardous substances that present "...an imminent and substantial endangerment..." to the public health or welfare or the environment, and to hold liable those parties responsible and to recover response costs from them.

The National Contingency Plan (NCP), CERCLA Section 105, establishes the processes and procedures that must be used by lead agencies in responding to releases of hazardous substances pursuant to CERCLA. The lead agency directs and facilitates activities related to a site, often including enforcement actions. When applying CERCLA authority, the lead agency must follow the requirements of the NCP. When responding to a hazardous substance release, the on-scene coordinator/remedial project manager should follow the processes and procedures of CERCLA and the NCP. Land management agencies,

including the USDI, are recognized in 40 CFR 300.5 as the "lead agency" under CERCLA for removal and remedial actions.

ACCESS TO SPLIT-ESTATE LANDS TO DEVELOP FEDERALLY OWNED MINERALS

Any mineral lessee, mining claimant, or operator (i.e., any person who has acquired from the United States the mineral deposits in such land) may enter and occupy as much of the private surface (patented) as may be required for the purpose of prospecting for, mining, or removal of minerals upon completion of any one of the following options (43 CFR 3814, 1994):

1. "Upon securing a written consent or waiver of the surface owner(s) for lands covered by the federal lease and (or) access to such lease over patented lands covered by the SRHA or HA estate or a single estate unified from several parcels originally patented under the above subject acts.
2. Upon payment of damages for crops, tangible improvements, and the value of the land for grazing purposes to the owner of the lands referenced in (1) above.
3. Upon the execution of a good and sufficient bond or undertaking to the United States for the use and benefit of the owner of the land referenced in (1) above, and to secure the payment of such damages for the crops, tangible improvements and the value of the land for grazing purposes of the owner as may be determined and fixed in an action brought upon the land or undertaken in a court of competent jurisdiction against the principles and sureties thereon."

For options one and two mentioned above, the BLM will require, at a minimum, a signed statement from the approved operator representative or the landowner that the operator or lessee and the landowner have reached an agreement for surface-disturbance damages. The BLM also may require the operator or lessee to furnish any additional agreement with the surface owner for the protection of surface resources and the reclamation of disturbed areas for incorporation into conditions of approval for authorizing the action. If the agreement is not deemed adequate to protect both onsite and offsite damage to the lands, additional measures and mitigation will be required. If an agreement is not reached, then the method according to option 3 must be followed. Under this method, a good and sufficient bond for not less than $1,000 according to 43 CFR 3814, must be posted by the lessee or operator payable to the United States for damages, specifically for crops, tangible improvements, and the value of the land for grazing purposes. This surface-owner bond is separate and not part of the bond obligations for leases under 43 CFR 3104. According to the procedures for this option, the lessee/operator must serve this bond on the impacted landowner; along with notification of their rights to object to the sufficiency of the bond in accordance with the procedure under 43 CFR 3814, and serve proof to the appropriate BLM office that they have done so. This then prompts the BLM authorized officer to independently notify the surface owner(s) in writing of their rights under the procedures regarding protests and appeals to the sufficiency of the bond. The protest period runs for 30 days from date of service of the bond and rights to protest and appeal the bond.

The emphasis in this section is on access to federal minerals within SRHA and HA patented land. This process for access also pertains to patents with the minerals reserved to the United States issued pursuant to Section 203 (sales) and Section 206 (exchanges) of the FLPMA.

The right to access an oil and gas lease includes all the land within the original patent where the minerals were reserved to the United States, even if that land is not within the lease. If an oil company wishes to cross one portion of a patent that has been subdivided into two portions to drill in the other portion, they have that right. In *Kinney Coastal Oil Co. v. Kieffer,* 277 US 488, 544 (1928), Coastal Oil, who held a

federal oil and gas lease, sued the surface owner for subdividing the surface and erecting buildings for a town. The Supreme Court agreed with the oil company and ruled to prevent the use of the area as a commercial or residential area. Thus, the mineral owner's dominant servitude applies anywhere within the limits of the original patent no matter how far or often the surface estate has been subdivided. In another landmark case, *Mountain Fuel Supply Co. v. Smith,* 471 F. 2d (10th Cir. 1973), an oil company wished to cross 10 parcels to drill a well on the 11th parcel. All of the parcels had been patented at different times to different parties. At a later date, the defendant in the case had obtained all of these parcels. The court made no less than three important holdings in this case. One, if the parcels had remained separately owned, the oil company would **not** have access rights across the 10 parcels to drill a well on the 11th; however, the company does have access rights on the 11th parcel on which they were to drill their well (471 F. 2d at 596,597). Two, where the surface ownership of all the parcels had been unified under a single ownership, the oil company would indeed have access across all the parcels (471 F. 2d at 597). Three, the approved unitization of the area by the appropriate authority was simply irrelevant (471 F. 2d at 597). The lessees were restricted to the development of their leases, or, if appropriate, within a unit. The SRHA or HA access rights to develop federal mineral lands are dictated by the patented surface or a combination of patents unified by a single owner.

Following are four decision options that may evolve during the protest period.

1. If no objections are received from the landowner within the protest period, the authorized officer will issue and serve a final decision of approval of the sufficient bond coverage to the landowner with a copy going to the lessee or operator. The lessee or operator can then enter onto the surface of the patented land(s) impacted by the lease, provided all applicable federal and state laws are met.

2. If the surface owner files a protest (objection) to the bond within the protest period, the authorized officer will review the bond coverage, accompanying papers, and objections to determine whether the bond should be approved or disapproved. If the bond is disapproved, a decision will be served on the lessee/operator with a copy going to the landowner. The lessee or operator will have 30 days to appeal to the Director of the BLM. Some of these cases have been appealed to the Interior Board of Land Appeals (IBLA); however, this is not the process according to the regulations contained in 43 CFR 3814. If the bond is approved, the decision will be served to the surface owner with a copy going to the lessee or operator. The application for permit to drill (APD) on Sundry Notice will be approved concurrently with the bond approval decision; the lessee or operator can then enter onto the land as specified above. The surface owner will be given 30 days to appeal the decision to the Director or the IBLA. If no appeal is filed, the authorized officer will serve a second final decision to the landowner approving the bond with no further right of appeal.

3. In no instances will lease action such as an APD be approved in the absence of the surface owner's consent without first satisfying the requirements of 43 CFR 3814. The purpose of these requirements is to ensure that the surface owners are treated fairly, and the mineral lessee or operators are allowed to enjoy the full privileges of their leases.

   In instances in which landowner demands become unreasonable or excessive, the lessee or operator is protected by 43 CFR 3814 regulations. Conversely, the BLM is assuring the landowners of the opportunity to protect themselves and ensure just compensation via the 43 CFR 3814 regulations.

4. If the landowner and lessee or operator cannot agree or settle on a payment for damages within the lifespan of the authorization(s), especially if the lease is to be abandoned, then the landowner

should take his/her action to a court of competent jurisdiction to secure payment of such damages. The lessee or operator also has the option to go to court to settle for payment of damages to the landowner. This may be true particularly if a lessee or landowner would want his or her bond released from any lease obligations, including termination. If an agreement cannot be reached for settlement for the payment of damages, either party may go to court at anytime in this above-mentioned process to have the court set the amount of damages, which are to be paid at that time. Another option that could be pursued by a lessee or operator for access to develop federal minerals is via state condemnation procedures.

Access to develop all federal minerals follow these procedures with the following exception; for federal coal reserved to the United States on split-estate lands, an agreement must be reached with the "qualified" landowner prior to developing federal coal. For a surface owner to be considered qualified, that person, persons, or corporation must (1) hold legal or equitable title to the surface of the split-estate lands; (2) have their principal place of residence on the land or personally conduct farming or ranching operations on the farm or ranch unit impacted by surface mining operations or receive a substantial portion of their income, if any, directly from such farming and ranching operations; and (3) have met the conditions of point 1 and 2 above for a period of not less than 3 years. If a surface owner has been found to be "unqualified," then access for development of the federal coal would follow the procedures of 43 CFR 3814 discussed above. Prior to posting a coal lease sale notice, the BLM requires the consent of all surface owners who meet the criteria of a 'qualified surface owner' and whose lands overlie coal deposits to determined a preference for or against mining by other than underground mining techniques (43 CFR 3427).

The SRHA was amended on April 16, 1993, Public law 103-23a. The amendment to the Act requires special procedures that must be complied with by individuals or companies prior to locating mining claims on land where the surface is patented and the minerals are reserved under the SRHA. A key change that came about from this amendment that pertains only to locatable minerals is that if the operations are located on lands patented under the SRHA and the claimant does not have written consent from the surface owner, then the claimant or operator must submit a plan of operation and obtain BLM approval. Where the surface owner has signed a consent agreement, a plan of operation is not required by the BLM and the claimant does not need BLM approval to start operations on that land.

Mineral materials including sand and gravel underlying SRHA lands or lands exchanged under Section 8 of the Taylor Grazing Act of 1934 were retained to the United States in the original patents. Therefore, the unauthorized removal of sand, gravel, and other common variety minerals is considered a trespass. The use, however, of mineral materials from SRHA lands for improvement and maintenance of those same lands, is not to be considered a trespass (Watt v. Western Nuclear, Inc., 103 S. Ct. 2218, June 6, 1983). Generally, the owners of the surface estate where the federal government owns the mineral estate may use without the benefit of a sales contract or permit, minimal amounts of mineral material for personal use within the boundaries of the surface estate.

It is not the BLM's position to encourage the practice of payment of damages in lieu of restoration, nor does the BLM question the terms and dollar amounts under which an agreement is made. The BLM's position merely is to ensure that an agreement is reached that is acceptable to both parties. The BLM, however, does have the right according to the MLA to require additional surface reclamation measures on all lease actions, although they must be reasonable, justifiable, and in compliance with all pertinent laws. The goal should be to restore these areas disturbed by lease activities and operations to their original condition or to a reasonable environmentally sound condition. The surface owner should be compensated for all damages created by lease development.

Policy and Guidance for Authorizing Class II Injection Wells for Fluid Disposal Located on Split-Estate, Private Surface/Federal Minerals

If an oil and (or) gas well located within a federal oil and gas lease on split-estate land is converted to an injection well for disposing of off-lease, off-unit-produced fluids by either a third party or the current oil and gas lessee or operator, a rights-of-way (ROW) is **not** the appropriate authorization and will **cease** being the permitting instrument. This policy resulted from two key IBLA decisions pertaining to (1) the Mallon Oil Company (104 IBLA 145, September 2, 1988) and (2) the Phillips Petroleum Company (105 IBLA 345, November 17, 1988). The outcome from the Mallon Oil Company case was that once the minerals have been removed from the ground, the void formerly occupied by the minerals reverted to the surface owner. In this case, both the surface and minerals were owned by the United States, and the court upheld that an ROW issued by the BLM was the appropriate authorization. In the Phillips Petroleum Company case, which involved split-estate lands, the BLM did not have the authority to issue a permit for the disposal of salt water into a dry well located on private surface and federal minerals. In actuality, the BLM used the wrong authorization mechanism—a permit pursuant to Section 302(b) of the FLPMA—instead of an ROW under Section 501 of the FLPMA. However, the BLM was not the owner. According to the Mallon Oil Company case decision, the void space was the property of the surface owner. Henceforth, the federal mineral estate will be protected using the following guidelines and procedures.

Where BLM determines that there are federal minerals within the formation for injection of fluids, the appropriate authorization for fluid disposal on existing federal oil and gas leases on split-estate lands is by an approved Sundry Notice (Form 3160-5). These well activities will be the responsibility of the appropriate lessee or operator and **not** a third party. In considering and documenting feasibility for each case, the following factors must be analyzed, where applicable, in the applicant's proposal for subsequent well operation (Sundry Notice): (1) geology, (2) economic factors, (3) volume of produced fluids, (4) hydrology and hydrogeology, (5) land use plans, (6) availability of private, state, and other land disposal sites, (7) state and (or) federal agencies' permitting requirements (Onshore Oil and Gas Order #7, 1994), (8) water quality, (9) well bore schematics (present and (or) proposed), (10) monitoring requirements of down hole injection or disposal, and (11) other factors determined by the authorized officer. Not only the applicant, but even more importantly, the BLM must consider these factors before approving an authorization.

If the proposal is determined to be feasible and a Sundry Notice is the instrument of authorization, the following conditions and stipulations should be considered and included as part of the authorization:

1. A stipulation stating that "The disposal well authorization may be terminated by the authorized officer of the BLM by a decision notifying the approved lessee or operator thirty days (30) prior to the date of termination. Termination must be for cause which includes, but is not limited to, compliance with both the lease and specific Sundry Notice authorization stipulations and conditions as well as the protection of the federal mineral estate, and the laws and regulations that govern thereof."
2. An approved UIC permit issued by the Wyoming Oil and Gas Conservation Commission and written approval from the surface owner
3. Produced fluid disposed in a well traced to the specific oil and gas well(s) from which it came, and these specific well(s) so stated as part of the approved Sundry Notice.

Converting federal oil and gas oil wells within a federal lease on split-estate lands to Class I commercial injection wells (wells used to dispose of hazardous waste; 40 CFR 144.6, 1993) will **not** be authorized for fluid disposal into a formation containing federal minerals.

If the BLM determines that the off-lease, off-unit-produced fluids are to be disposed of by injection into a formation found to be totally void of federal minerals, the following conditions **must** be addressed before a well is approved for disposal purposes:

1. The lessee or operator must comply with all the appropriate regulations within 43 CFR 3160 (1994), and, more specifically, Section 3162.3-4, "Well Abandonment."
2. If used for disposal purposes, the BLM must consider that the well meet specific criteria, including (1) that appropriate steps be taken to avoid intermingling of fluids (oil, gas, and water) between formations or intervals that contain fluids of substantially different quality, and (2) protection of **all** federal minerals that may exist in other formations.
3. For an abandoned federal well to be used for subsurface disposal of off-lease or off-unit produced fluids into a formation depleted of federal minerals, a BLM release form must be properly filled out and signed by the private surface owner(s) and accepted by the BLM authorized officer. By signing this release form, the private surface owner acknowledges his or her potential future liability for disposal activities and ensures that the operation of the well is operated according to standards as required by appropriate federal and state regulatory agencies. With an approved release, the landowner also could ultimately assume the responsibility for the final plugging and reclamation requirements for the well. When the BLM accepts this release, the lessee's or operator's oil and gas bond also should be released for this well.

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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX B

Federal Laws, Regulations, Policies, and Guidance Applicable to Each Resource Topic

Appendix B
Federal Laws, Regulations, Policies, and Guidance Applicable to Each Resource Topic

Management of Bureau of Land Management (BLM)-administered lands within the Casper Field Office is directed by a variety of laws, regulations, policies, and directives. In addition, the Casper Field Office utilizes current research, management and conservation plans, as well as other research and related directives (i.e., BLM Instruction Memorandums [IMs], Memorandums of Understanding [MOU], Wyoming Game and Fish Department objectives), as appropriate, to guide habitat management for vegetation, fish, wildlife, and special status species. Appendix B is organized according to eight resource topics (e.g., Physical Resources, Mineral Resources, Fire Management and Ecology Resources, etc.). Please note that the list is extensive, but not necessarily comprehensive.

1000 – Physical Resources

Bates Hole Watershed Management Plan, 1985

BLM coordinates with the Wyoming Department of Environmental Quality (DEQ) – Air Quality Division to ensure that existing and proposed emission sources comply with applicable air quality rules and regulations.

BLM Manual Section 7240, Water Quality, 1978

BLM Manual Section 7250, Water Rights, 1984

BLM Water Rights Policy, 1984

Bureau of Land Management grazing administration range improvements and water rights (43 CFR 4100et seq.)

Clean Air Act of 1963, as amended

Clean Water Act of 1987, as amended (33 U.S.C. 1251 and 1977)

Desert Land Act of 1977, as amended (43 U.S.C. 321 et seq.)

Economy Act of 1932, as amended (Pub. L. 72-211, 47 Stat. 417; 31 U.S.C. 686)

Executive Order 11514, Protection and Enhancement of Environmental Quality (March 5, 1970, *as amended* by Executive Order 11991 May 24, 1977)

Executive Order 11738, Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans (September 10, 1973)

Executive Order 11988, Floodplain Management (May 24, 1977)

Executive Order 11990, Protection of Wetland (May 24, 1977)

Executive Order 12088, Federal Compliance with Pollution Control Standards (October 13, 1978)

Executive Order of April 17, 1926, Public Water Reserve No. 107

Federal Land Policy and Management Act (FLPMA) of 1976 as amended (Pub. L. 94-579; 90 Stat. 2743; 43 U.S.C. 1701 et seq.)

Federal Water Pollution Control Act of 1948 (33 U.S.C. 1323)

National Ambient Air Quality Standards (NAAQS)

1000 – Physical Resources (Continued)

National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

Permits associated with Sections 401, 402, and 404 of the Clean Water Act administered through the U. S. Environmental Protection Agency (EPA), Wyoming DEQ, and the U. S. Army Corps of Engineers

Public Rangelands Improvement Act of 1978 (Pub. L. 95-514, 92 Stat. 1803, October 25, 1978; 43 U.S.C. 1901 et seq.)

Rivers and Harbors Act of 1899 (10 U.S.C. 1899, Section 10)

Safe Drinking Water Act, as amended 1977 (Pub. L. 95-190. 42 U.S.C. 201)

Soil and Water Resources Conservation Act of 1977 (Pub. L. 95-87, 91 Stat. 1407, November 8, 1977. 16 U.S.C. 2000 et seq.)

Soil Conservation and Domestic Allotment Act of 1935, as amended (Pub. L. 74-46, 49 Stat. 163; 16 U.S.C. 590)

Soil Information Assistance for Community Planning and Resource Development Act of 1966 (Pub. L. 89-560; 80 Stat. 706, et seq.; 42 U.S.C. 3271)

Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the Bureau of Land Management in the State of Wyoming, U.S. Bureau of Land Management, Supplemental Draft EIS, Appendix 10, January 1998

Surface Mining Control and Reclamation Act of 1977 (Pub. L. 95-87, 91 Stat. 445; 30 U.S.C. 1201 et seq.)

Taylor Grazing Act of 1934, as amended (Pub. L. 73-482, 48 Stat. 1269)

The Regional Haze Rule, promulgated by the U. S. EPA in 1999

Unified Federal Policy for a Watershed Approach to Federal Land and Resource Management, October 18, 2000

Water Resources Planning Act of 1965, as amended (Pub. L. 89-80, 69 Stat. 244, 42 U.S.C. 1962 et seq.)

Watershed Protection and Flood Protection Act, as amended (Pub. L. 83-566; 68 Stat. 666; 16 U.S.C. 1001 et seq.)

Wyoming Air Quality Standards and Regulations (WAQS&R)

Wyoming Environmental Quality Act

2000 – Mineral Resources

Advisory Committee Regulations (43 CFR 1784.)

Alaska Native Allotment Act of 1906 (43 U.S.C. 270-273, 43 Stat. 197, as amended by 70 Stat. 954)

Alaska Native Claims Settlement Act of 1971 (43 U.S.C. 1601)

BLM Mineral Materials Disposal Handbook 3809 Manual, 1985, revised 2001

Bonding for oil and gas and geophysical operations (43 CFR 3104)

Bureau of Land Management Land Use Planning Regulation (43 CFR 1600)

2000 – Mineral Resources (Continued)

Case Law:

1. *Watt vs. Western Nuclear, Inc.,* 103 S. Ct 2218 (June 2, 1983)
2. *United States vs. Coleman,* 390 S. Ct 599 (April 22, 1968)
3. *McClarty vs. Secretary of the Interior,* 408 F.2d 907, 908 (9th Cir. 1969)

Clean Water Act, Section 404

Council on Environmental Quality Regulations (40 CFR 1500 et seq.)

Disposal of Reserved Minerals Under the Stockraising Homestead Act (43 CFR 3814)

Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.)

Energy Policy Act 2005 (Pub. L. 109-58)

Executive Order 1151, Protection and Enhancement of Environmental Quality, revised by Executive Order 1199

Executive Order 11593, Protection and Enhancement of the Cultural Environment

Executive Order 11988, Floodplain Management

Executive Order 11990, Protection of Wetlands

Executive Order 13212, Actions To Expedite Energy-Related Projects

Federal Coal Management Program Coal Screening Process, December 1997

Federal Coal Management Program Regulations (43 CFR Group 3400)

Federal Land Policy and Management Act of 1976 (FLPMA), as amended (Pub. L. 94-579; 90 Stat. 2743; 43 U.S.C. 1701 et seq.)

Federal Onshore Orders

Onshore Order No. 1 – Approval of operations on onshore Federal and Indian oil and gas leases
Onshore Order No. 2 – Onshore oil and gas drilling operations on Federal and Indian oil and gas leases
Onshore Order No. 3 – Site security on Federal oil and gas leases
Onshore Order No. 4 – Measurement of oil on Federal oil and gas leases
Onshore Order No. 5 – Measurement of gas on Federal oil and gas leases
Onshore Order No. 6 – Hydrogen sulfide operations on Federal oil and gas leases
Onshore Order No. 7 – Disposal of produced water from Federal oil and gas leases

Federal Oil and Gas Royalty Management Act of 1976

Fish & Wildlife Coordination Act of 1934, as amended

General Mining Law of 1872

Geothermal Steam Act of 1970 (30 U.S.C. 1001 et seq.)

Inspection and Enforcement Program for Locatable Minerals Activities, WO IM 89-402, April 3, 1989

Interagency Agreement between the BLM and the Bureau of Reclamation

Interagency Agreement between the U.S. Forest Service and the BLM, November 4, 1991

Locatable Minerals Program (43 CFR 3700; 43 CFR 3800)

Memorandum of Agreement (MOA), between the Wyoming Department of Environmental Quality and the State of Wyoming Oil and Gas Conservation Commission, July 9 1999 Wyoming DEQ

2000 – Mineral Resources (Continued)

Memorandum of Understanding (MOU) between the BLM and the Department of Defense

Memorandum of Understanding between BLM and State of Wyoming Oil and Gas Conservation Commission

Memorandum of Understanding No. WY 19 Between the United States Department of Interior Bureau of Land Management and the Wyoming Department of Environmental Quality Land Quality Division for Management of Surface Mining and Exploration for Locatable Minerals on Public Lands, May 29, 2002

Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351 et seq.)

Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.)

National Environmental Policy Act (NEPA) of 1969 as amended (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

National Historic Preservation Act of 1966, as amended (16 U.S.C. 470)

Notice to Lessees

NTL2B – Disposal of produced water from federal oil and gas leases

NTL3A – Reporting requirements of undesirable events on federal oil and gas leases

NTL4A – Royalty or compensation for oil and gas lost on federal oil and gas leases

Oil and Gas Leasing; Onshore Oil and Gas Operations (43 CFR 3160)

Onshore Oil and Gas Geophysical Exploration (43 CFR 3150)

Oil and Gas Leasing (43 CFR Group 3100)

Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.)

Federal Coal Leasing Amendments Act of 1976, as amended (90 Stat. 1083 et seq.)

Federal Land Policy and Management Act of 1976 (FLPMA), as amended (Pub. L. 94-579; 90 Stat. 2743; 43 U.S.C. 1701 et seq.)

Independent Offices Appropriation Act of 1952 (31 U.S.C. 9701)

National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

National Materials and Minerals Policy, Research and Development Act of 1980 (Pub. L. 96-479, 94 Stat. 2305)

Public Administrative Procedures (43 CFR 1810)

State of Wyoming Occupational Health and Safety Rules & Regulations

State of Wyoming Oil & Gas Conservation Commission Rules & Regulations

Stock Raising Homestead Act of 1916 as amended (39 Stat. 865, 107 Stat. 60; 43 U.S.C. 299)

Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.)

Taylor Grazing Act of 1934, as amended (Pub. L. 73-482, 48 Stat. 1269)

The Clean Water Act of 197, as amended (33 U.S.C. 1251)

The Federal Highway Act of 1958 (23 U.S.C. 107[d] and 317)

The Mining and Minerals Policy Act of 1970

Trespass [kinds of] (43 CFR 9230)

U.S. Bureau of Alcohol, Tobacco, and Firearms Regulations

U.S. Forest Service Thunder Basin National Grassland Management Plan, August 2002

2000 – Mineral Resources (Continued)

Use and Occupancy Under the Mining Law (43 CFR 3715)

Wyoming Department of Environmental Quality Rules & Regulations

Act of July 26, 1866 (14 Stat. 251; 43 U.S.C. 661)

Act of July 9, 1870 (16 Stat. 217; 30 U.S.C. 35)

Act of May 10, 1872, as amended (17 Stat. 91)

Act of February 25, 1920 (41 Stat. 437; 30 U.S.C. 181 et seq.)

The Mineral Leasing Act of February 25, 1920, as amended (30 U.S.C. 181 et seq.)

Act of April 23, 1932 (47 Stat. 136; 43 U.S.C. 154)

Reclamation Project Act of August 4, 1939 (43 U.S.C. 387)

Act of July 31, 1947 (61 Stat. 681)

Act of August 7, 1947 (61 Stat. 913, 915; 30 U.S.C. 355 et seq.)

The Mineral Leasing Act for Acquired Lands of August 7, 1947, as amended (30 U.S.C. 351 et seq.)

Small Tract Act of 1938, as amended by the Act of June 8, 1954 (52 Stat. 609, 68 Stat. 239; 43 U.S.C. 682a)

The Multiple Mineral Development Act of August 13, 1954 (30 U.S.C. 521 et seq.)

The Multiple Mineral Development Act of August 13, 1954 (30 U.S.C. 521 et seq.)

Act of July 23, 1955 (69 Stat. 367)

Act of July 23, 1955 (Pub. L. 167; 43 CFR 3710))

Act of September 26, 1961 (76 Stat.652)

Act of October 21, 1976 (90 Stat. 2743; 43 U.S.C. 1715, 1716)

The Department of Energy Organization Act of August 4, 1977 (42 U.S.C. 7101 et seq.)

The Act of October 30, 1978 (Pub. L. 91-596, 84 Stat. 1608; 29 U.S.C. 667)

Exploration and Mining, Wilderness Review Program, April 1980 (43 CFR 3802)

Platte River Resource Management Plan, September 1985

Modified Bonding Policy, WO IM 87-672 August 26, 1987

Buffalo Field Office Resource Management Plan, April 2001

Mineral Materials Disposal, June 1983, revised October 1, 2001 (General 43 CFR 3600)

Surface Management, General, June 1983-; last revision November 2001 (43 CFR 3600)

Mineral Material Disposal BLM Manual Handbook H-3600-1, revised February 22, 2002

3000 – Fire Management and Ecology

Clean Air Act, as amended in 1990

Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 et seq.)

Executive Order 13112, Invasive Species

3000 – Fire Management and Ecology (Continued)

Federal Land Policy and Management Act of 1976 (FLPMA), as amended (Pub. L. 94-579; 90 Stat. 2743; 43 U.S.C. 1701 et seq.)

Healthy Forest Initiative, IM 2003-035; November 2002

Healthy Forest Restoration Act of 2003

National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

National Fire Plan 2000

Recent Changes in Management Direction: Federal Wildland Fire Management Policy, National Fire Plan, WO-IM-2002-034

4000 – Biological Resources

A Multi-State Conservation Plan for the Black-tailed Prairie Dog Cynomys ludovicianus in the United States, ,

Administration of Forest Management Decisions, 43 CFO Subpart 5000 through Subpart 5511

Aquatic Resource Management, BLM Manual 6720

Bald Eagle Protection Act of 1940 (54 Stat. 250;16 U.S.C 668-668d,)

Black-footed Ferret Recovery Plan of 1978

BLM Intermountain West and Northern Great Plains joint ventures' recommendations for improving and managing waterfowl and special status species

BLM National List of Invasive Weed Species of Concern (accessible at www.co.blm.gov/botany/invasiweed.htm)

BLM National Sage Grouse Habitat Conservation Strategy, November 2004

BLM Wyoming Sensitive Species Policy and List, September 20, 2002

Clean Water Act of 1987 (33 U.S.C. 1251, 1977)

Cooperative Agreements with Weed and Pest Control Districts: KA010009 (Natrona County); KAA010018 (Converse County); KAA010017 (Goshen County); and KAA010021 (Platte County)

Declared List of Weeds and Pests: Wyoming Weed and Pest Control Act of 1973, W.S. 11-5-102(a)(vii) and W.S. 11-5-102(a)(viii), 2006 (accessible at www.wyoweed.org)

Department of the Interior Fish and Wildlife Policy: State-Federal Relationships (43 CFR 24)

Ducks Unlimited's Conservation Plan

Eastside Forest and Woodland Management Action Plan for Oregon and Washington (IM No. 2003-035)

Emergency Wetlands Resources Act of 1986 (Pub. L. 99-645;100 Stat. 3582)

Endangered Species Act of 1973, as amended (16 U.S.C.1531 et seq.)

Establishment of Areas of Critical Environmental Concern to manage and protect significant natural resources (43 CFR 1610)

Executive Order 11514, Protection and Enhancement of Environmental Quality

Executive Order 11987, Exotic Organisms

Executive Order 11988, Floodplain Management

4000 – Biological Resources (Continued)

Executive Order 11989, Off-Road Vehicles on Public Lands

Executive Order 11990, Protection of Wetlands

Executive Order 13112, Invasive Species

Executive Order 13186, Responsibilities of Federal Agencies To Protect Migratory Birds

Extension of the Cooperative Agreement for Platte River Research and Other Efforts Relating to Endangered Species Habitats Along the Central Platte River, Nebraska, December 15, 2000

Federal Land Policy and Management Act of 1976 (FLPMA), as amended (Pub. L. 94-579; 90 Stat. 2743; 43 U.S.C. 1701 et seq.)

Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2814 et seq.)

Fish & Wildlife 2000; Rare Plants & Natural Plant Communities, A Strategy for the Future National Strategy Plan Series

Fish and Wildlife 2000 BLM National, State and District policies

Fish and Wildlife Conservation Act of 1980 (Pub. L. 96-366; 94 Stat. 1322; 16 U.S.C. 2901 et seq.)

Fish and Wildlife Coordination Act of 1958 (16 U.S.C. 661 et seq.)

Forest Pest Control Act of 1947 (61 Stat. 16; U.S.C 594-1 to 594-1)

Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration (43 CFR 4180)

Guidance on Special Status Species Management, BLM WO IM 97-118

Guidelines to Manage Sage Grouse and Their Habitats, as printed in the *Wildlife Society Bulletin,* 2000, 28(4):967-85

Healthy Forest Initiative, IM 2003-035; November 2002

Interagency Swift Fox Conservation Strategy

Land Use Planning Handbook, BLM Handbook H-1601-1

Laramie Peak Bighorn Sheep Habitat Management Plan

Manual of Wildlife, Fish and Plant Resources, BLM Manual 6500

Migratory Bird Conservation Act of 1929 (16 U.S.C. 715-715r)

Migratory Bird Treaty Act of 1918 (16 U.S.C. 703 et seq.)

Muddy Mountain Environmental Education Area Recreation Management Plan, Casper Field Office

Muddy Mountain Forest Health and Recovery Plan Environmental Assessment, Casper Field Office, 2001, WY-060-01-027

Multiple-Use Reservoirs Committee Design Recommendations for Reservoirs Suitable for Fisheries, Waterfowl, and Special Status Waterfowl

National and Wyoming BLM Policy

National Environmental Policy Act of 1969 (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

National Fire Plan 2000

National Fish and Wildlife Foundation Establishment Act (16 U.S.C. 3701 et seq.; Pub. L. 98-244, March 26, 1984, 98 Stat. 107, as amended by Pub. L. 100-240, January 11, 1988, 101 Stat. 1785, Pub. L. 100-653, November 14, 1988, 102 Stat. 3834; and Pub. L. 103-232, 108 Stat. 336)

4000 – Biological Resources (Continued)

National Sage-Grouse Habitat Conservation Strategy, IM 2005-024

North American Land Bird Conservation Initiative

North American Waterfowl Management Plan

North American Wetlands Conservation Act, as amended (Pub. L. 101-233; 16 U.S.C. 4401)

Public Domain Forest Management Initiative of 1989

Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901 et seq.)

Quality Control for Environmental Impact Statements, BLM Information Bulletin 2002-056

Raptor Habitat Management Plan – Bureau of Land Management, Fish and Wildlife 2000 National Strategy Plan Series

Recommended Formats for Land Use Plans, Records of Decision, and Their Supporting Environmental Impact Statements, IB-2002-056

Recreational Fisheries Program

Resource Management Plan, Platte River Resource Area, July 1985 (as maintained and amended)

Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats, IM 98-140

Riparian Habitat, BLM Manual 1737

Riparian Habitat, Interior Department Manual 520

Riparian-Wetlands Initiative for the 1990's, The U.S. Department of the Interior, Bureau of Land Management, January 22, 1992

Sage Grouse Working Groups' recommendations for improving and managing sage-grouse habitats

Service Guidance on Siting, Construction, Operation, and Decommissioning Communication Towers, U.S. Fish and Wildlife Service memorandum dated September 14, 2000

Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, USFWS, May 13, 2003

Sikes Act of 1974, as amended (Pub. L. 106-580)

Soil and Water Resources Conservation Act of 1977 (16 U.S.C. 2001 et seq.)

Special Status Raptor Habitat Management – Bureau of Land Management, Fish and Wildlife 2000 National Strategy Plan Series

Special Status Species Management, BLM Manual 6840

Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the BLM in the State of Wyoming, December 3, 2004

Statement of Policy Regarding Sage-Grouse Management Definitions, and Use of Protective Stipulations, and Conditions of Approval, BLM IM No. WY-2004-057

Status and management of Neotropical migratory birds. U.S. Forest Service, Fish and Wildlife 2000, National Strategy Plan Series, Bureau of Land Management

Suggested Practices for Special Status Raptor Protection on Power Lines: The State of the Art in 1996, Avian Power Lines Interaction Committee

Taylor Grazing Act of 1934, as amended (Pub. L. 73-482; 48 Stat. 1269)

The Bald and Golden Eagle Protection Act, established in 1940 and expanded in 1962

4000 – Biological Resources (Continued)

Townsend's Big-Eared Bat Management Plan relative to management at abandoned mine lands

Umbrella Memorandum of Understanding Between Wyoming Game and Fish Department and U.S. Department of the Interior Bureau of Land Management (Wyoming) For Management of the Fish and Wildlife Resources on the Public Lands. March 1990.

Water Quality Act of 1987, as amended from the *Federal Water Pollution Control Act of 1977 (Clean Water Act)* as amended (33 U.S.C. 1251 et seq.)

Wildlife, Fish and Plant Resources, BLM Manual 6500

Wyoming BLM Mitigation Guidelines for Surface-disturbing and Disruptive Activities, Appendix A of the Buffalo Resource Management Plan

Wyoming Game and Fish's Comprehensive Wildlife Conservation Strategy, December 30, 2005

Wyoming Greater Sage-Grouse Conservation Plan 2003 (accessible at http://www.wy.blm.gov/fluidminerals04/presentations/NFMC/020TomChristiansen.pdf)

Wyoming Guidelines for Managing Sagebrush Communities with Emphasis on Fire Management, November 2002 (accessible at http://www.wy.blm.gov/wildlife/docs/fsbfiremgmt-cover.pdf

Wyoming Partners in Flight Wyoming Bird Conservation Plan, Version 2.0

5000 – Heritage and Visual Resources

American Antiquities Act of 1906 (16 U.S.C. 431 et seq.)

BLM Information Memorandum No. 77-98

BLM Instruction Memorandum No. 96-175

Closure and Restriction (43 CFR 8364)

Earl Douglas appeal of the decision of the Commissioner of the General Land Office to the Department of the Interior dated July 24, 1913.

Exploration and Mining, Wilderness Review Program (43 CFR 3802)

Federal Cave Resources Protection Act of 1988 (63 U.S.C. 4301 et seq.)

Federal Land Policy and Management Act of 1976 (FLPMA), as amended (Pub. L. 94-579; 90 Stat. 2743; 43 U.S.C. 1701 et seq.)

Free Use of Petrified Wood (43 CFR Part 3620)

General Procedural Guidance for Paleontological Resource Management, BLM Handbook 8270-1

Historic Sites Act of 1935 (16 U.S.C. 461 et seq.)

Land Use Planning Handbook, BLM Handbook H-1601-1, Appendix C

Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.)

Mineral Materials Disposal; General Provisions (43 CFR 3601)

National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

National Natural Landmarks Program (36 CFR 62)

5000 – Heritage and Visual Resources (Continued)

Oil and Gas Leasing (43 CFR, 3162)

Onshore Oil and Gas Order No. 1

Paleontological Resource Management, BLM Manual Section 8270

Prescribed Resource Management Planning, BLM Manual 1616

Procedures (43 CFR, 8200)

Public money, property or records (18 U.S.C. Section 641)

Secretarial Order 3104

Solicitor's Opinion of Jan. 17, 1986

Solicitor's Opinion of July 10, 1963

Solicitor's Opinion of Oct. 12, 1956

Supplemental Program Guidance, BLM Manual 1620

Surface Mining Control and Reclamation Act of 1977

The establishment of Areas of Critical Environmental Concern for the management and protection of significant natural resources, such as paleontological localities (43 CFR 1610.7-2)

The Materials Act of July 31, 1947, as amended

Visitor Services, Rules of Conduct, (43 CFR, 8365.1-5[b])

Visual Resource Management, BLM Manual 8400

Willful disturbance, removal and destruction of scientific resources or natural objects and 8360.0-7 identifies the penalties for such violations (43 CFR Subpart 8365.1-5)

6000 – Land Resources

Acquisitions Handbook, BLM H-2100-1

Airport (43 CFR 2911)

Airport and Airway Improvement Act of 1982 , Section 516 (49 U.S.C. 2215)

American Antiquities Act (16 U.S.C. 433)

Archaeological Resources Protection Act [ARPA] (16 U.S.C. 470aa)

BLM Manual Special Recreation Permits, BLM Manual 8372

Cadastral Surveys-General, BLM Manual 2800

Carey Act – Section 4 (28 Stat. 422; 43 U.S.C. 641 et seq.)

Carey Act Grants (43 CFR 2610)

6000 – Land Resources (Continued)

Conditions of Use (Off- Road Vehicles), BLM Manual 8341

Desert Lands Act (19 Stat. 377; 43 U.S.C. 321 et seq.)

Desert-Land Entries (43 CFR 2520)

Designation of Roads and Trails, BLM Manual 8342

Energy Act of August 8, 2005

Engle Act (43 U.S.C. 155 et seq.)

Executive Order 1035, Delegating to the Secretary of the Interior the authority of the President to withdraw or reserve lands of the United States for public purposes (17 FR 4831)

Executive Order 11644, Use of Off-road Vehicles on the Public Lands (as amended by Executive Order 11989)

Executive Order 12548, Grazing Fees

Executive Order 13212, Actions to Expedite Energy-Related Projects

Executive Order 6910, Withdrawal of Public Lands to be Used for Conservation and Development of Natural Resources

Executive Order 8841, Restoring Certain Public Lands to their Former Status of Being Withdrawn under Executive Order 6964 of February 5, 1936

FAA Airport Grants (43 CFR 2640)

Federal Aid Highway Act, as amended (23 U.S.C. 107[d] and 317)

Federal Land Policy and Management Act (FLPMA)of 1976, as amended (Pub. L. 940579; 90 Stat. 2743; 43 U.S.C. 1701 et seq.)

Federal Land Transaction Facilitation Act of July 25, 2000 (Pub. L. 106-248)

Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States

Grazing Administration (43 CFR 4100), special emphasis on Subpart 4180

Highway Safety Act of 1966, as amended (23 U.S.C. 401 et seq.)

Indian Allotments (43 CFR 2530)

Interim Wind Energy Development Policy, Bureau of Land Management IM 2003-020

Land and Water Conservation Act, as amended (16 U.S.C. 4601 et seq.)

Land Classification (43 CFR 2400)

Land Exchange Handbook, BLM H-2200-1

Land Resource Management (2000) 43 CFR, Subchapter B

Land Withdrawals (43 CFR 2300)

6000 – Land Resources (Continued)

Leases, Permits, and Easements; Effective Dates of Permit Decisions; Appeal Procedure (43 CFR 2920)

Memorandum of Understanding on Title 23, Federal-aid Highway Rights-of-Way, WY920-02-09-108

Mineral Leasing Act of 1920, as amended (30 U.S.C. 185)

MOAs between BLM and various entities

Montana Outfitter Management Guidelines, BLM Handbook H-8372-2

National Energy Policy

National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

National Historic Preservation Act of 1966 (16 U.S.C. 470)

National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands

National Parks and Recreation Act of 1978 (16 U.S.C. 1242 and 1243)

National Trails System Act 1968, as amended (16 U.S.C. 1241 et seq.)

National Wild and Scenic Rivers Act (16 U.S.C. 1271 et seq.)

Natrona County Off-Road Vehicle Implementation Plan, WY-060-8003

Off-road Vehicle (ORV) Designation, Signing Standards, and Guidelines, BLM IM WY-84-256

Off-Road Vehicles, BLM Manual 8340

Oil and Natural Gas Pipelines and Related Facilities (43 CFR Group 2880)

Permits for Recreation on Public lands (43 CFR 2930)

Power of Secretary or Designated Officer (43 U.S.C. 1201)

Prescribed Resource Management Planning, BLM Manual 1616

Railroad Acts of March 3, 1875 (43 U.S.C. 93 et seq.) and as amended

Recreation and Public Purposes Act (43 CFR 2740)

ROW Corridors, ROW Use Areas, Land Use Planning, BLM IM 2002-196

ROW, Principles and Procedures (43 CFR Group 2800)

Sales: General Land Policy and Management Act (43 CFR 2700)

Section 4 of the General Allotment Act (24 Stat. 389; 25 U.S.C. 334)

Sikes Act of 1974 (16 U.S.C. 670 et seq.)

Solar Energy Development Policy, BLM IM 2005-006

Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the BLM in the State of Wyoming

6000 – Land Resources (Continued)

Stock Raising Homestead Act of 1916

Supplemental Program Guidance, BLM Manual 1620

Surface Mining Control and Reclamation Act of 1977

Surface Transportation Safety Act of 1982 (Pub. L. 97-424, Section 126[d])

Taylor Grazing Act of June 28, 1934, as amended (43 U.S.C. 315 through 315r)

The Federal-Aid Highway Act of 1968, as amended (23 U.S.C. 116)

The Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901, et seq.)

Timber Access Road Act of 1955 (69 Stat. 374)

Travel Management Guidelines for the Public Lands in Wyoming, BLM IM WY-2005-034

Trespass [kinds of] (43 U.S.C. 1201)

Visitor Services (43 CFR 8360)

Wild and Scenic River Act (16 U.S.C. 1281c)

Wilderness Act of 1964 (16 U.S.C. 1131)

7000 – Special Designations

American Antiquities Act (16 U.S.C. 433)

Americans with Disabilities Act, 1990

Archaeological Resources Protection Act of 1979 (16 U.S.C. 470)

Architectural Barriers Act of 1968, as amended (42 U.S.C. 4151, et seq.)

Bald Eagle Habitat Management Plan for the Platte River Resource Area and the Jackson Canyon Area of Critical Environmental Concern, 1999

BLM Manual 8351 (Wild and Scenic Rivers)

BLM Oregon/Mormon Pioneer National Historic Trails Management Plan

Byways, BLM Handbook 8357-1

Cultural Resource Considerations in Resource Management Plans, BLM IB-2002-101

Executive Order 11593, Protection and Enhancement of the Cultural Environment

Executive Order 13287, Preserve America

Federal Land Policy and Management Act of 1976 (FLPMA), as amended (Pub. L. 94-579; 90 Stat. 2743; 43 U.S.C. 1701 et seq.)

Federal Lands Highways Program (23 U.S.C. 204)

7000 – Special Designations (Continued)

Intermodal Surface Transportation Efficiency Act of 1991 (Pub. L. 102-240)

Land and Water Conservation Act, as amended (16 U.S.C. 4601 et seq.)

Land Use Planning Handbook, BLM Handbook -1601-1

National Back Country Byway Review, IM 200-170

National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

National Parks and Recreation Act of 1978 (16 U.S.C. 1242 and 1243)

National Trails System Act (16 U.S.C. 1241 et seq.)

National Wild and Scenic Rivers Act (16 U.S.C. 1271 et seq.)

Native American Graves Protection and Repatriation Act of 1990 (43 CFR 10)

Rehabilitation Act of 1973 (29 U.S.C. 794)

Sikes Act of 1974, as amended (Pub. L. 106-580; 16 U.S.C. 670 et seq.)

Wilderness Act of 1964 (16 U.S.C. 1131)

8000 – Socioeconomics

Additional Guidance on the Treatment of Socioeconomic Issues in Land Use Plans, BLM IM-2002-167

American Folklife Preservation Act of 1976 (20 U.S.C. 2101)

American Indian Religious Freedom Act of 1978 (Pub. L. 95-341; 42 U.S.C. 1996 and 1996a)

Archaeological Resources Protection Act of 1979 (16 U.S.C. 470)

Civil Rights Act of 1964 (Pub. L. 88-352)

Clean Water Act of 1972, as amended (33 U.S.C. 1251 et seq.)

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. 9601 et seq.)

Council on Environmental Quality (CEQ) Environmental Justice Guidance Under NEPA

Emergency Planning and Community Right-to-Know Act of 1986

Executive Order 12898, Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 130006, Locating Federal Facilities On Historic Properties In Our Nation's Central Cities

Executive Order 13007, which Mandates the protection and preservation of Indian religious practices

Executive Order 13148, Greening of the Government Through Leadership in Environmental Management, 2000

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments

Federal Facilities Compliance Act of 1992 (Pub. L. 102-386)

8000 – Socioeconomics (Continued)

Federal Land Policy and Management Act of 1976 (FLPMA), as amended (Pub. L. 94-579, 90 Stat. 2743; 43 U.S.C. 1701 et seq.

Guidance on Environmental Justice in Planning, IM-2002-164

Guidance on the Recommended Formats for Land Use Plans, Records of Decision, and Their Supporting Environmental Impact Statements, BLM IB-2002-056

Hazardous Materials Management, BLM Manual Section 1703

Indian General Allotment Act of 1887

Indian Mineral Development Act of 1982 (25 U.S.C. 2101 et seq.)

Indian Reorganization Act of 1934 (25 U.S.C. 461 et seq.)

Indian Self Determination and Education Assistance Act of 1975 (Pub. L. 93-658; 25 U.S.C. 450 et seq.)

Military Munitions and Explosives of Concern: A Handbook for Federal Land Managers with Emphasis on Unexploded Ordnance, Draft BLM Handbook H-1703-2

National Contingency Plan Regulations (40 CFR 300)

National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91-190; 42 U.S.C. 4321 et seq.)

National Environmental Policy Act of 1972 (42 U.S.C. 4321)

National Historic Preservation Act of 1966 (16 U.S.C. 470)

Native American Coordination and Consultation, BLM Manual 8160

Native American Graves Protection and Repatriation Act of 1990 (43 CFR 10)

Natural Resource Damage Assessment Regulations

Occupational Safety and Health Act of 1970 (29 U.S.C. 651 et seq.)

Oil Pollution Act of 1990 (33 U.S.C. 2715a)

Pre-acquisition Environmental Site Assessments, BLM Manual Handbook H-2101-4

Recreational and Public Purposes Act of 1926, as amended in 1988 (43 U.S.C. 869)

Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.)

Rules applicable only within the State of Wyoming that have been adopted under the Surface Mining Control and Reclamation Act of 1977 (30 CFR 950)

Safe Water Drinking Act of 1974, as amended (42 U.S.C. 300 et seq.)

Secretarial Order 3206 for implementing the Endangered Species Act

Surface Mining Control and Reclamation Act, Section 409 (Pub. L. 95-87, Section 401-C.1)

Use of the Economic Profile System in Planning, BLM IM 2003-169

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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX C

Public Involvement, Consultation, and Coordination

Appendix C
Public Involvement, Consultation, and Coordination

This appendix describes specific actions taken by BLM to consult and coordinate with tribes, government agencies, and interest groups; and to involve the interested general public during preparation of the EIS. A Notice of Intent (NOI) published in the *Federal Register* on June 20, 2003, formally announced the intent of BLM to revise the existing plan and prepare the associated EIS. Publication of the NOI initiated the scoping process and invited participation of affected and interested agencies, organizations, and the general public in determining the scope and issues to be addressed by alternatives and analyses in the EIS. Additional detail regarding actions taken by BLM to involve the public and consult and coordinate with tribes, government agencies, and interest groups is provided in Appendix C.

PUBLIC INVOLVEMENT

The BLM decisionmaking process is conducted in accordance with the requirements of the NEPA, CEQ regulations implementing NEPA, and the USDI and BLM policies and procedures implementing NEPA. NEPA and the associated regulatory and policy framework require federal agencies involve the interested general public in their decisionmaking.

In accordance with CEQ scoping guidance, the BLM provided avenues for public involvement as an integral part of revising the RMP and preparing the EIS. CEQ scoping guidance defines scoping as the "process by which lead agencies solicit input from the public and interested agencies on the nature and extent of issues and impacts to be addressed and the methods by which they will be evaluated" (CEQ 1981). The scoping report, which summarizes issues identified during the scoping process, is available on the Casper RMP web site at http://www.blm.gov/rmp/casper.

The intent of the scoping process is to provide opportunity for the general public tribes, other government agencies, and interest groups the general public to scope the planning process and to identify planning issues to be addressed by alternatives or analysis in the EIS. In general, public involvement assists the agencies by the following:

- Broadening the information base for decisionmaking
- Informing the public about the Draft EIS and proposed RMP and the potential impacts associated with various management decisions
- Ensuring that public needs and viewpoints are brought to the attention of the agency.

Scoping Period

Publication of the NOI on June 20, 2003, initiated the scoping period and announced the BLM's intention to revise the Casper RMP and prepare a Draft EIS. Scoping for the RMP revision and Draft EIS took place from June 20, 2003, to November 20, 2003. BLM regulations require a 30-day scoping period; however, the Casper revision scoping period remained open for 5 months.

The BLM utilized the public scoping process to identify planning issues to direct (drive) the formulation of alternatives and to frame the scope of analysis in the EIS. The scoping process also was used to introduce the public to preliminary planning criteria, which set limits to the scope of the RMP revision. Approximately 45 comment letters were received during the scoping period. Chapter 1 and the scoping report provides a general summary of the issues found in these letters.

Scoping Notice

The BLM prepared a public scoping notice and mailed the notice to 1,104 federal, state, and local agencies, interest groups, and members of the general public on October 20, 2003. In the scoping notice, the BLM solicited written comments on the RMP revision process, issues, and impacts and invited the public to a series of four public scoping meetings held throughout the planning area. The scoping notice served to remind the public of the opportunity to view the Summary of the Management Situation Analysis (MSA), the project schedule, and other relevant project information on the Casper RMP revision web site. In addition, the scoping notice provided general information on the planning area, background information on the planning process, and dates and locations scheduled for the public scoping meetings.

Scoping Meetings

Public scoping meetings were held in Wheatland, Torrington, Douglas, and Casper, Wyoming, on November 10, 11, 12, and 13, 2003, respectively. BLM structured the meetings in an open-house format, with two formal presentations made by the Casper Field Office Manager during each meeting. Resource specialists and other representatives of the BLM were on hand to personally address questions and provide information to meeting participants. The BLM provided four fact sheets, an executive summary of the MSA, and a series of four display boards at each scoping meeting. The BLM encouraged attendees to comment using a variety of media, including written comment forms, flip charts, planning area maps, and a computer kiosk. Table C-1 identifies the public scoping meetings.

Table C-1. Public Involvement, Coordination, and Consultation Meetings (2003)

Date	Location	Type of Meeting
November 10, 2003	Wheatland, Wyoming	Public Scoping Meeting
November 11, 2003	Torrington, Wyoming	Public Scoping Meeting
November 12, 2003	Douglas, Wyoming	Public Scoping Meeting
November 13, 2003	Casper, Wyoming	Public Scoping Meeting

Opportunities to Comment

The BLM provided a variety of avenues through which the public could submit comments during the scoping period. These avenues are listed below:

- **Mail** – The NOI and the scoping notice invited interested parties to submit comments by mail to the Casper Field Office.
- **E-mail** – The NOI provided the following e-mail address for submitting comments electronically: crmpwymail@blm.gov.
- **Online** – The Casper RMP revision web site at www.blm.gov/rmp/casper/ launched on November 3, 2003. The web site provides history about the project, a project schedule, a document library, a mailing-list screen, and a comment screen. The public can enter their comments on the website and submit them electronically throughout the RMP revision process.
- **Telephone** – The scoping notice and all four fact sheets provided a phone number so interested parties could call and submit verbal comments.

- **In Person at the Scoping Meetings** – The BLM provided the public the opportunity to comment at all four public meetings. Comment methods included a computer kiosk, through which interested individuals could type in their comments; forms that could be filled out and submitted at the meetings or mailed in at a later date; and flip charts for expressing comments and concerns to share with BLM and other members of the public.

Mailing List

The mailing list for public scoping was initially developed from the Casper Field Office mailing list, but was updated throughout the planning process. The BLM encouraged scoping meeting participants to add their names to the mailing list. Some individuals added themselves to the project mailing list by registering on the project web site, as well as through personally contacting the BLM and requesting placement on the mailing list. The Casper Field Office mailing list includes approximately 1,400 addresses and is used as the basis for distributing the Draft EIS.

Newsletters

Periodic newsletters are regularly developed and distributed to keep the public informed of the Casper RMP revision and Draft EIS planning process. The January 2004 newsletter provided basic background information on the project, including the purpose and need for updating the RMP and issues that the plan may address. The newsletter also extended an invitation to the public to be involved in the process, advertised the Casper RMP revision web site, and summarized public scoping comments.

The February 2005 newsletter described the development of the alternatives, the process of selecting a preferred alternative, announced the schedule of the Draft EIS, and offered avenues for public involvement. The third newsletter, distributed three weeks before release of the Draft EIS, announced the publication of the Draft EIS and provided details on how to provide comments.

Web Site

The Casper RMP revision and Draft EIS web site is located at http://www.blm.gov/rmp/casper. The site serves as a virtual repository for documents related to the development of the RMP revision and Draft EIS, including announcements, bulletins, and draft and final documents. These documents are available in PDF format to ensure they are available to the widest range of interested parties. The web site gives the public the opportunity to submit for comments and be added to the project mailing list.

Future Public Involvement

Public participation is ongoing throughout the planning process. Members of the public have the opportunity to comment on the content of the Draft EIS during the specified 90-day comment period. The Final EIS will consider all substantive oral and written comments received during the 90-day comment period. The Record of Decision (ROD) will be issued by the BLM after the release of the Final EIS, the Governor's Consistency Review, and a potential Protest Resolution.

CONSULTATION AND COORDINATION

This section documents the consultation and coordination efforts undertaken by the BLM throughout the process of revising the RMP and developing the Draft EIS. Title II, Section 202, of the Federal Land Policy and Management Act (FLPMA) directs the BLM to coordinate planning efforts with Native American tribes, other federal departments, and agencies of the state and local governments as part of its land use planning process. The BLM is also directed to integrate NEPA requirements with other environmental review and consultation requirements to reduce paperwork and delays (40 Code of Federal

Regulations [CFR] 1500.4-5). The BLM accomplished coordination with other agencies and consistency with other plans through on-going communications, meetings, and collaborative efforts with the ID Team, which includes BLM specialists and federal, state, and local agencies.

Cooperating Agencies

For the Casper RMP revision planning effort, the Casper Field Office extended cooperating agency status to the State of Wyoming, Converse County, Natrona County, Platte County, Goshen County, various conservation districts, and tribal governments. The BLM invited these agencies to participate because they have jurisdiction by law or because they offer special expertise. A list of the cooperating agencies that have actively participated in cooperators' meetings leading up to the development of the RMP revision and Draft EIS include the following:

Local Governments

- Converse County Commissioners
- Natrona County Commissioners
- Platte County Commissioners
- Converse County Conservation District
- Lingle-Fort Laramie Conservation District
- North Platte Valley Conservation District
- South Goshen Conservation District
- Natrona County Conservation District

State of Wyoming

- Wyoming State Planning Office
- Wyoming Department of Agriculture
- Wyoming Department of Environmental Quality
- Wyoming Department of State Parks and Cultural Resources – State Historic Preservation Office
- Wyoming Department of State Parks and Cultural Resources – State Trail Program
- Wyoming State Oil and Gas Commission
- Wyoming Game and Fish Department
- Wyoming Office of State Lands and Investments

Federal Government

- U.S. Environmental Protection Agency
- USDI National Park Service, Fort Laramie National Historic Landmark

BLM formally invited the cooperating agencies to participate in the development of RMP alternatives and to provide existing data and other information relative to their agency responsibilities, goals, mandates and expertise. The Casper Field Office held a number of meetings and workshops with the cooperating agencies. Table C-2 lists these meetings and workshops.

Table C-2. Meetings with Cooperating Agencies

Date	Location	Type of Meeting
September 25, 2003	Casper, Wyoming	Introduction to the BLM Planning Process (For Cooperating Agencies)
January 2004	Douglas, Wyoming	Consistency Review with USFWS
February 9-13, 2004	Casper, Wyoming	Workshop #1: Alternative Formulation (All Cooperating Agencies)
March 1-5, 2004	Casper, Wyoming	Workshop #2: Alternative Formulation (All Cooperating Agencies)
October 25-28, 2004	Casper, Wyoming	Workshop #3: Cooperators' Review of the Preferred Alternative (All Cooperating Agencies)
April 7, 2005	Douglas, Wyoming	Field Manager's Meeting with Cooperators
May 19, 2005	Casper, Wyoming	Alternatives Reformulation – Biological Resources WGFD
August 3-4, 2005	Casper, Wyoming	Workshop #4: Field Manager's Meeting with Cooperators on Reformulated Alternatives
May 18, 2006	Douglas, Wyoming	Field Manager's Meeting with Cooperators

BLM Bureau of Land Management
USFWS U.S. Fish and Wildlife Service
WGFD Wyoming Game and Fish Department

Section 7 Consultation

The Casper Field Office contacted the U.S. Fish and Wildlife Service (USFWS) regarding Section 7 of the Endangered Species Act (ESA). The BLM sent a letter to the USFWS concerning Section 7 consultation, presenting the approach for consultation and providing details on the process of Programmatic Species-Specific Section 7 Consultations on Wyoming BLM RMPs. The USFWS provided the following species lists to the Casper Field Office for evaluating BLM Section 7 responsibilities:

- List of Threatened and Endangered species in the Bureau of Land Management, Casper Field Office, dated March 18, 2004
- Endangered, Threatened, Proposed and Candidate Species, and Designated Critical Habitat in Wyoming State, dated March 23, 2004.

Consultation letters between the USFWS and the Casper Field Office are located at the end of this appendix. The Casper Field Office will continue consultation with the USFWS regarding the RMP revision through completion of the final biological assessment and final RMP.

Native American Interests

Consultation with Native Americans is part of the NEPA scoping process and a requirement of FLPMA. The Casper Field Office took multiple steps to contact the tribes and include them in the scoping process.

On October 23, 2003, the BLM sent letters to the following tribes inviting them to be a part of the planning process through consultation and public scoping meetings, as well as requesting information to be considered in the planning process:

- Blackfeet Nation
- Cheyenne River Sioux Tribe
- Comanche Tribes of Oklahoma
- Confederated Salish and Kootenai Tribe
- Crow Tribe
- Eastern Shoshone Tribe
- Kiowa Tribe of Oklahoma
- Lower Brule Sioux Tribe
- Nez Perce Tribe
- Northern Arapaho Tribe
- Northern Cheyenne Tribe
- Oglala Lakota Nation
- Rosebud Sioux Tribe
- Shoshone-Bannock Tribe
- Ute Tribe

Following the scoping process, the BLM sent a letter to each of the above-listed tribes on August 6, 2005, requesting specific information in identifying areas of special concern for the tribes and presented the opportunity for meetings or field trips with representatives from the tribes. Representatives from the Casper Field Office followed up on these letters with telephone calls to each tribe. The BLM stressed the need for the tribes to review and comment on the Draft EIS in the letters and during the follow-up telephone calls.

On January 31, 2005, the BLM sent letters to the tribes concerning the Cedar Ridge Traditional Cultural Property (TCP) located in the planning area. The letters informed the tribes on how the Preferred Alternative would impact the TCP and asked for any information or concerns that the tribes had concerning the TCP.

Members of the Northern Arapaho, Northern Cheyenne, and Crow tribes met with representatives from the Casper Field Office between February and March 2005, to discuss details of the RMP. After the meetings, the tribes received maps of the general locations of cultural and spiritual interest to the tribes, as well as an offer to meet again and take part in a tour of the planning area. On November 18, 2005, BLM sent letters to the above-listed tribes inviting them to become cooperating agencies in the preparation of the Caser RMP.

The Confederated Salish and Kootenai Tribe is the only tribe that declined participation in consultation during the planning process. The other tribes expressed intent to participate in future steps during consultation. Native American consultation letters are included at the end of this appendix.

DISTRIBUTION LIST

A copy of the Draft EIS has been provided to the following governments, individuals, and institutions:

Tribal Governments

- Blackfeet Nation
- Cheyenne River Sioux Tribe
- Comanche Tribe of Oklahoma
- Confederated Salish and Kootenai Tribe
- Crow Tribe
- Eastern Shoshone Tribe
- Kiowa Tribe of Oklahoma
- Lower Brule Sioux Tribe
- Nez Perce Tribe
- Northern Arapaho Tribe
- Northern Cheyenne Tribe
- Oglala Lakota Nation
- Rosebud Sioux Tribe
- Shoshone-Bannock Tribes
- Ute Tribe

Local Governments (Counties, Cities, Towns)

Converse County, Wyoming

- Converse County Commissioners
- Converse County Conservation District
- Converse County Farm Bureau
- Douglas Chamber of Commerce

Natrona County, Wyoming

- Casper Area Convention and Visitors Bureau
- Casper Chamber of Commerce
- City of Casper
- Natrona County Commissioners
- Natrona County Conservation District

Platte County, Wyoming

- Platte County Commissioners
- Platte County Conservation District
- Wheatland Chamber of Commerce

Goshen County, Wyoming

- Goshen County Commissioners
- Lingle-Fort Laramie Conservation District
- North Platte Valley Conservation District
- South Goshen Conservation District
- Torrington Chamber of Commerce

State of Wyoming

- Senator Jim Anderson, Converse/Platte
- Senator John Barrasso, Natrona
- Senator Bill Hawks, Natrona
- Senator Kit Jennings, Natrona
- Senator Charles K. Scott, Natrona
- Senator Curt Meier, Goshen/Platte
- Representative James C. Hageman, Goshen/Platte
- Representative Ross Diercks, Converse/Goshen
- Representative Edward Buchanan, Goshen
- Senator Charles Townsend, East Converse/North East Goshen
- Representative Deborah Alden, Converse/Platte
- Representative Bob Brechtel, Natrona
- Representative Roy Cohee, Natrona
- Representative Dave Edwards, Converse
- Representative Gerald Gay, Natrona
- Representative Mary Meyer Gilmore, Natrona
- Representative Steve Harshman, Natrona
- Representative Thomas A. Lockhart, Natrona
- Representative Ann Robinson, Natrona
- Representative Tom Walsh, Natrona

Wyoming State Agencies

- Office of the Governor, Environmental Policy Division
- Wyoming Business Council
- Wyoming Department of Environmental Quality
  - Air Quality Division
  - Land Quality Division
- Wyoming Department of Agriculture
- Wyoming Department of State Parks and Cultural Resources
  - State Museum
- Wyoming Department of Transportation
- Wyoming State Planning Office
- Wyoming Game and Fish Department
  - Casper Office
- Wyoming State Geologic Survey
- Wyoming Office of State Lands and Investments
- Wyoming State Engineer's Office
- Wyoming State Historic Preservation Office
- Wyoming Department of Administration and Information
- Wyoming Federal Highway Administration
- Wyoming Department of Employment, Research, and Planning Division

Wyoming State Boards/Commissions

- Air Quality Advisory Board
- Board of Wildlife Commissioners
- Natural Gas Pipeline Authority
- Natural Gas Pipeline Authority
- Wyoming Agriculture Board
- Wyoming Environmental Quality Council
- Wyoming Farm Bureau Federation
- Wyoming Land Quality Advisory Board
- Wyoming Livestock Board
- Wyoming Mining Council
- Wyoming Oil and Gas Conservation Commission
- Wyoming Recreation Commission
- Wyoming State Board of Outfitters and Professional Guides
- Wyoming State Grazing Board
- Wyoming Trails Council

Associations/Councils

- Coalbed Methane Coordination Coalition
- Mormon Trails Association
- Oregon-California Trails Association
- Petroleum Association of Wyoming
- Powder River Basin Resource Council
- Powder River Basin Resource Council
- Wildlife Habitat Council
- Wyoming Association of Municipalities
- Wyoming County Commissioners Association
- Wyoming Mining Association
- Wyoming Natural Diversity Database
- Wyoming Outdoor Council
- Wyoming Sportsman's Association
- Wyoming Stockgrowers Association
- Wyoming Wilderness Association
- Wyoming Woolgrowers Association
- Independent Petroleum Association of Mountain States

Clubs/Alliances/Societies/Groups

- American Wildlands
- Audubon Society
- Audubon Wyoming
- Back Country Horsemen of America
- Biodiversity Conservation Alliance
- Casper Dirt Riders
- Conservancy of the Phoenix
- Foundation for North American Wild Sheep
- Izaak Walton League
- Land and Water Fund of the Rockies
- Murie Audubon Society
- National Wildlife Federation
- North American Pronghorn Foundation
- Outdoor Women of Wyoming
- Pathfinder Back Country Horsemen
- Platte River Parkway Trust
- Platte River Rod and Gun Club
- Public Lands Advocacy Rocky Mountain Elk Foundation
- Sierra Club
- The Conservation Fund
- The Land and Water Fund of the Rockies
- The Land Trust Alliance
- The Nature Conservancy
- The Wilderness Society
- The Wildlife Society
- Trout Unlimited
- Western Land Exchange Project
- Wyoming Fly Casters Association
- Wyoming Motorcycle Trails Association
- Wyoming Nature Conservancy
- Wyoming Wildlife Federation

Congressional Delegation

- U.S. Senator Mike Enzi
  – Washington, D.C., Casper, Cheyenne, Gillette
- U.S. Senator Craig Thomas
  – Washington, D.C., Cheyenne, Sheridan, Casper
- U.S. Representative Barbara Cubin
  – Washington, D.C., Cheyenne, Casper

U.S. Department of the Interior Agencies

- Bureau of Indian Affairs
- U.S. Bureau of Reclamation
  Washington, D.C., and Casper and Provo, Wyoming, offices
- Minerals Management Service
- National Park Service
  Washington, D.C., and Denver, Colorado, offices
- Office of Environmental Policy and Compliance
- Natural Resources Library
- Office of Surface Mining
- U.S. Fish and Wildlife Service
  Washington, D.C.; Denver, Colorado; and Cheyenne, Wyoming, offices
- U.S. Geological Survey
  Washington, D.C., and Cheyenne, Wyoming, offices

Other Federal Agencies

- U.S. Environmental Protection Agency
- U.S. Department of Agriculture
  - – Forest Service
    - » Big Horn National Forest
    - » Black Hills National Forest
    - » Bridger-Teton National Forest
    - » Medicine Bow/Routt National Forest
    - » Shoshone National Forest
  - – Natural Resource Conservation Service
    - » Casper and Baggs, Wyoming, offices
- Army Corp of Engineers
- Department of Energy
  Western Area Power Area
  - » Loveland and Lakewood, Colorado, offices
- Federal Highway Administration
- Federal Energy Regulatory Commission
- U.S. Government Printing Office
- National Weather Service

Other Governmental Agencies

- Colorado Division of Water Resources
- State of Colorado, Department of Public Health and Environment, Air Pollution Control Division
- Colorado State Forest Service
- Routt County Planning Director
- Platte River Power Authority

Bureau of Land Management

- Buffalo Field Office
- Cody Field Office
- Kemmerer Field Office
- Lander Field Office
- Newcastle Field Office
- Pinedale Field Office
- Rawlins Field Office
- Rock Springs Field Office
- Worland Field Office
- Wyoming State Office - Cheyenne
- Washington Office

Libraries

- Library of Congress
- University of Wyoming Library
- Converse County Public Library
- Goshen County Public Library
- Natrona County Public Library
- Casper College Library
- Eastern Wyoming College Library
- Platte County Public Library

Educational Institutions

- Eastern Wyoming University
- Casper College
- University of Wyoming
  - – Trustees
  - – Geology Museum
  - – Department of Rangeland Ecology
  - – Department of Geology and Geophysics
- Western Wyoming Community College
  - – Archeological Services

Media

Cheyenne
- Cheyenne Newspaper
  Wyoming State Tribune Eagle
- Cheyenne Radio
  KRAE
  KJJL
  KFBC
  KGAB
- Cheyenne TV
  KGWN-TV5
  KLWY
  KKTU

Casper
- Casper Newspapers
  Casper Star Tribune
  Casper Journal
- Casper Radio
  KASS
  KQLT
  LVOC
  KMCD
  KYOD
- Casper TV
  KTWO
  KWYF
  KGWC
  KCWY
  KFNB

Douglas
- Douglas Newspaper
  Douglas Budget
- Douglas Radio
  KKTY

Glenrock
- Glenrock Newspaper
  Glenrock Independent

Guernsey
- Guernsey Newspaper
  Guernsey Gazette

Moorcroft
- Moorcroft Newspaper
  Moorcroft Leader

Paonia, CO
- Paonia, CO Newspaper
  High Country News

Torrington
- Torrington Newspaper
  Torrington Telegram
- Torrington Radio
  KGOS

Wheatland
- Wheatland Newspaper
  Platte County Record Times
- Wheatland Radio
  KYCN
  KZEW

Statewide Newspapers
- *Wyoming Business Report*
- *Wyoming Livestock Roundup*

Statewide Radio
- Wyoming Public Radio
- Northern Broadcasting System
- KYCN

Wire Services
- Wyoming Associated Press

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SECTION 7 CONSULTATION LETTERS

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Wyoming State Office
P.O. Box 1828
Cheyenne, Wyoming 82003-1828

In Reply Refer To:
6840 (930)

OCT 2 7 2003

Mr. Brian T. Kelly
Wyoming Field Supervisor
U.S. Fish & Wildlife Service/Ecological Services
4000 Airport Parkway
Cheyenne, WY 82001

Re: Programmatic Consultation between the Bureau of Land Management and the U.S. Fish and Wildlife Service on Wyoming Resource Management Plans

Dear Mr. Kelly:

Evaluations of Wyoming Bureau of Land Management's (BLM) 11 current Resource Management Plans (RMPs) indicated that Section 7 Consultations under the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*) had not been completed or were not complete to current standards. Therefore, Wyoming BLM needed to re-initiate consultation on these RMPs. Due to the enormity of this task, the FWS and BLM decided to conduct the Section 7 Consultations via a species-by-species programmatic approach on 17 (now 16) listed, proposed and candidate species (since initiation of this process, the listing of the mountain plover was determined to be not warranted). Consultation for each species is to be considered within the boundary of the State of Wyoming and activities approved by the BLM analyzed for each respective RMP.

This process is consistent with the August 30, 2000, Memorandum of Agreement (MOA), signed by the BLM, U.S. Fish and Wildlife Service, USDA Forest Service and National Marine Fisheries Service. That MOA committed the signatory agencies to work closer to improve the interagency consultation process under the Endangered Species Act (Act) – in effect to streamline the process and to work together cooperatively. The attached process is an excellent example of the premises of the MOA, and the cooperative and effective way our two agencies can work together.

F77937 C519
103046

Attached are two copies of the process. Please sign and date each copy and return to the State BLM Office. We will provide a signed copy for your records.

If you have any questions regarding this programmatic Section 7 Consultation process, please feel free to contact Jeff Carroll (307) 775-6090.

Sincerely,

for Robert A. Bennett
State Director

Attachment

WY930-03-10-116

Programmatic Species-Specific Section 7 Consultation between BLM and FWS on Wyoming BLM Resource Management Plans

(October 27, 2003)

Background

A review of all 12 Wyoming Bureau of Land Management's (BLM's) Resource Management Plans (RM Plans) indicated that Section 7 Consultation under the Endangered Species Act of 1973 (ESA) should be reinitiated. These RM Plans cover public lands in Wyoming (11 RM Plans). In addition, a new RM Plan in Wyoming, the Snake River RM Plan is being prepared at this time and will similarly need section 7 Consultation. This document is being prepared in order to comply with direction identified in the August 2000 Streamlining MOU.

In response to its Section 7 responsibilities, Wyoming BLM is both re-initiating consultation with the U. S. Fish and Wildlife Service (FWS) on all 11 of its current Wyoming RM Plans and initiating Section 7 consultation on the new Snake River RM Plan. The consultation process will be programmatic. BLM planning itself will not result in impacts to listed species. The BLM is preparing, through a contractor, a Biological Assessment (BA) for each listed species or Biological Evaluation (BE) for each proposed and each candidate species. Separate BAs/BEs will cover each species' range on a statewide basis throughout Wyoming and Biological Opinions (BOs) or concurrence letters for these BAs and BEs will be completed by the FWS. We expect that this process will be completed by the end of fiscal year 2004 (Refer to Attachment 1. Planned Schedule for Completion).

Concurrent with the section 7 programmatic efforts described below, Wyoming BLM will follow through with a ten-year plan to revisit National Environmental Policy Act (NEPA) requirements on all 11 of its existing Wyoming RM Plans to ensure NEPA compliance. This will entail revision of existing RM Plans as needed. Completion of the revisions will occur throughout this ten-year span. Currently, Wyoming RM Plans are either: (1) already revised; (2) in the process of being revised; or (3) scheduled for revision.

Discussion

RESOURCE MANAGEMENT PLANS. RM Plans are used by the BLM to provide management direction and to guide future actions. RM Plans identify desired outcomes, also known as "desired future conditions". These desired future conditions or outcomes are expressed in RM Plans as goals, standards, and objectives. RM Plans also establish allowable uses, including allocations, levels of use, and restrictions on use, as well as defining the management actions needed to achieve desired outcomes. These are often referred to as RM Plan decisions or land use plan level decisions. RM Plans decisions normally require additional decision steps before activities having on-the-ground impacts can be carried out. A thorough NEPA analysis, generally an EIS, is completed on every RM Plan, as well as Section 7 consultation.

IMPLEMENTATION DECISIONS. Implementation decisions are decisions to take action to implement RM Plans and usually represent BLM's final approval to allow on-the-ground actions to proceed. They are also called project-level or activity-level decisions. These types of decisions range from planning documents that are narrower in scope, to approvals for use authorizations, and are based on a more detailed NEPA analysis tiered to the RM Plan analysis. A new section 7 consultation is conducted where the action may affect listed species or designated critical habitat. Proposals for implementation actions can be initiated by BLM (or other federal entity) or by application from the public. Further, where activity plans, also known as implementation plans, provide the support and final approval for site-specific projects or other implementation actions, those decisions are considered implementation decisions.

Sometimes, there is an intermediate step in the decision-making process. Unlike most implementation actions, the issuance of oil and gas leases, for example, does not allow commencement of on-the-ground activities that

may affect a species or designated critical habitat. Therefore, the Service and BLM have agreed that the NEPA analysis and Section 7 programmatic consultation conducted at the RM Plan level will cover the impacts expected to result from both the RM Plan and the lease issuance stages of decision making. The programmatic consultation for this step must be updated annually to ensure that the BLM is using the best commercial and biological information currently available. Before approving an application for ground-disturbing lease activities such as an application for permit to drill (APD), surface use plan of operations (SUPO), or similar proposal for exploration and development of a lease, site specific NEPA analysis is conducted and Section 7 consultation will be completed whenever the proposed activity may affect a listed or proposed species.

STREAMLINING CONSULTATION. At this point, Section 7 consultation will have been completed at the RM Plan level for authorized BLM activities. The RPAs, T&Cs, RPMs provided in RM Plan BOs can be included in subsequent Section 7 consultation at the project development levels (i.e. full field developments) and site specific levels. Since RPAs, T&Cs, and RPMs will have been developed at the RM Plan Level, there should be a quicker, more detailed Section 7 consultation at the subsequent project development level and site specific level. This tiered or "top down" consultation approach will expedite subsequent lower level or site specific consultations, and provide consistency to the management of listed and proposed species throughout the state. The annual review between the FWS and BLM will ensure that the BLM RM Plans will remain in compliance with Section 7 despite any addition of newly listed species or modified or new BLM activities.

How the Section 7 Process Will Work (see Attachment 2) :

FOR EACH LISTED, PROPOSED, AND CANDIDATE SPECIES IN WYOMING

1. The Wyoming BLM will work internally or with a contractor to prepare draft statewide programmatic BAs/BEs. These BAs/BEs will address all potential impacts of all anticipated BLM activities as identified (Refer to Attachment 3. List of Activities) in the 11 RM Plans. Each BA or BE will be distributed to BLM Field Staff and FWS for review and comment. These comments will be incorporated into the final programmatic BA/BE. The FWS will be involved early on in the RM Plan revision to assist BLM in addressing their section 7(a)(1 and 2) responsibilities. This early involvement will minimize the effort by both agencies needed to consider listed, proposed and candidate species at the programmatic level. In addition, the preparation of an RM Plan-specific BA by the BLM and subsequent RM Plan-specific BO by the FWS should hold no surprises for the BLM, FWS, individuals, or organizations and will merely be a straightforward completion of the section 7 consultation process.

2. Each final programmatic BA/BE will be sent to the FWS along with a letter requesting Section 7 consultation. These final programmatic BAs/BEs will then be posted on the Wyoming BLM website.

3. For each final programmatic BA/BE, a draft BO will be completed by the FWS on the anticipated activities identified in the RM Plans. These BOs will include any relevant Reasonable and Prudent Alternatives (RPAs), Terms & Conditions (T&Cs), Reasonable and Prudent Measures (RPMs), and Conservation Measures (CMs). Draft BOs are to be submitted to the BLM within 60 days of receipt by FWS of each final programmatic BA/BE and a letter from the BLM initiating formal consultation. The BLM will work with the FWS to make any appropriate changes to the draft programmatic BO as it is developed. The FWS will provide BLM a final programmatic BO within 30 days of receipt of all BLM comments on the draft BO. The final programmatic BO for each species will also be posted on the Wyoming BLM website.

4. A determination on how to best incorporate any RPAs, T&Cs, RPMs into RM Plans will be based on the discussion of the categories following:

a. Each RM Plan will be reviewed as soon as the final BO is received by BLM to determine if RPAs, T&Cs, RPMs require an allocation change (change in proposed use) or a change in stipulations either of which will be included in approval documents (See Table 1, below).

1. If an allocation change is required, then an RM Plan amendment will be prepared.
2. If an allocation change is not required, then it may be appropriate to prepare a RM Plan maintenance action to update the affected RM Plan.

3. If an allocation change is required, but the RM Plan revision is in progress, then the RPAs, RPMs and T&Cs for the BO will be incorporated via the ongoing EIS (or EA).

Table 1. Process for Amending Resource Management Plans (identified in 43 CFR 1610.5-4&5)

	Change in Allocation	*No Change of allocations or stipulations*	*Change in Stipulations*
RM Plan revision completed or more than one year from completion	EA or EIS – amend RM Plan	IM w/maintenance action	IM or EA/EIS – amend or maintenance action
RM Plan revision underway and less than one year from completion	Incorporate into "new" RM Plan EIS	IM incorporate into "new" RM Plan	Incorporate into "new" RM Plan EIS

KEY:
IM – Instruction Memorandum (no "new/additional" public input – happened previously at initial EIS, a maintenance action to the RM Plan will occur to document minor changes in dates or refinement of existing decisions)
EA – Environmental Analysis
EIS – Environmental Impact Statement (With changes, public will be provided an opportunity to provide input at the EA/EIS stage)
MA – Maintenance Action.

5. BLM anticipates RPAs, T&Cs, RPMs from Species-Specific Programmatic BOs of Section 7 Consultation with the FWS could result in changes in one of the following three categories:

a. Changes in agency administrative activities or coordination procedures, or a change in data collection or field inventory techniques;

b. Changes in stipulations or conservation measures for BLM authorized activities designed to protect the species that may result in modifications to existing activities or new activities. They do not preclude activities, but may impose seasonal or other restrictions or a change in the activity's standard operating practices; or

c. Changes in stipulations or conservation measures for BLM authorized activities designed to protect the species that could result in major curtailment or restrictions, reductions, minimizations or exclusions of use or activities over a significant area. These may be exclusions of use (such as no leasing) or highly restrictive in nature (such as No Surface Occupancy).

Changes that fall into the first two categories do not constitute changes in resource allocations and therefore may not require amendments to RM Plan-level decisions. It may be appropriate to incorporate these changes into the structure of RM Plans as maintenance actions. When the level of significance of the new measures upon current users is in doubt or the change is likely to generate a high level of interest by the public, it is advisable to prepare an EA for the maintenance action and to make the EA available to the public.

Changes in the third category may require alterations to RM Plan-level decisions (such as allowable uses and levels of use) and must be incorporated into RM Plans by an amendment or as part of a larger RM Plan revision. These types of changes should typically have a more thorough analysis by the field office involved. Individuals or organizations may perceive these allocations as resulting in significant changes to how they "use" the resource. These perceptions must be addressed when amending RM Plans or preparing larger RM Plan revisions.

BLM will maintain, amend, or revise its RM Plan(s) relative to the Programmatic Species-Specific BO Terms and Conditions as soon as possible, but within the annual review period. This process will take into account the status of the affected RM Plans, number and geographic distribution of affected RM Plans, and associated workload.

6. To further streamline and provide consistency to this process, upon completion of the each of the Species Specific Programmatic BOs, the following applies:

   a. If a species occurs in only one field office, that field office will prepare either a maintenance action or an amendment, as appropriate, to the RM Plan for that species.

   b. If a species occurs in more than one BLM field office, the BLM state office will work with each of those field offices involved and prepare a "multi-office" maintenance action or an amendment applicable to each affected RM Plan.

7. The FWS and BLM will develop and sign a Memorandum of Agreement that commits each agency to participate in the annual Section 7 RM Plan level review (statewide by RM Plan area). The review will consist of a thorough examination of each RM Plan and their associated Maintenance Actions, RM Plan amendments and BOs for changes to (1) species status and information, (2) new proposed implementation actions, and (3) resultant effects that were not identified in the original consultation. At the time of each annual review, the BLM field offices will provide a list of new or anticipated Instruction Memorandums, Maintenance Actions and Amendments for each RM Plan. In addition, a list of each field office's standard conservation measures/stipulations, information regarding the past years activities, and information regarding any new proposed activity-types will also be brought to the review. The FWS will bring an updated list of proposed, threatened and endangered species, designated habitats and species inventories. To keep the Section 7 Consultation up-to-date and the BLM RM Plans in compliance with ESA, each RM Plan and associated MAs and RM Plan amendments will be reviewed by FWS and BLM at an annual meeting starting in the spring of 2004 (no more than every 365 days), to:

   a. address any newly listed species or changes in status of species (since the previous 365 day review), if a species is listed prior to the yearly update, then analysis will begin within 30 days of the listing;

   b. identify whether new information indicates that effects occurred or did not occur as expected, and what changes should be implemented as a result of this information;

   c. evaluate current BLM authorizations for any new or modified activities, as well as proposals for large projects, that are anticipated to be considered over the next year;

   d. report the amount of any "take" of species or habitat to the FWS and evaluate if the take was within the amount allowable if an incidental take permit was issued;

   e. evaluate if project projections or reasonable foreseeable developments may exceed the anticipated take levels;

f. evaluate if effects were what was anticipated;

g. identify what RM Plan actions have been completed to date (track baseline);

h. evaluate consistency in use of stipulations and conservation measures among field offices.

To summarize, new information, if it exists, will be analyzed to reveal effects of the RM Plan implementation (actions) that may affect listed or proposed species or designated or proposed critical habitat in a manner or to an extent not considered in the original consultation or previous year's annual review. If the action is subsequently modified in a manner that causes an effect to a listed or proposed species or designated or proposed critical habitat that was not considered in the original consultation or previous year's annual review; and/or, if a new species is listed or critical habitat is designated that may be affected by the RM Plan, then the RM Plan may be re-analyzed.

PROCESS FOR POTENTIAL JEOPARDY ANALYSIS. Where potential exists for BLM actions to result in a Jeopardy determination by the FWS, the agencies will work together to develop viable alternatives and measures previous to initiation of formal consultation. Neither the BLM nor the FWS foresee that any management action would go forward if its implementation would result in Jeopardy to any listed or proposed species. This will be ensured through BLM's incorporation of offsetting measures (acceptance of RPA) into the proposed action(s).

The attached matrix (Attachment 4) shows each species and the corresponding responsible BLM Field Offices.

APPROVALS:

FOR THE U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, WYOMING STATE OFFICE

By:

Alan L. Kesterke for — 10/31/03

Robert A. Bennett — Date
Wyoming State Director

FOR THE U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE, WYOMING FIELD OFFICE

By:

B. T. Kelly — 10/27/03

Brian T. Kelly — Date
Wyoming Field Supervisor

5

Attachment 1

Planned Schedule for Completion of Programmatic Biological Assessment/Biological Opinions for RM Plans in Wyoming

as of 6 August 2003

Species	Contractor	Final BA	Final BO	IM	Who
Whooping Crane	Real West Natural Resource Cons	7/02	7/02		Pam Cornelisse
Kendall Warm Springs Dace	Accipiter Biol Cons	8/03	Goal = 8/03	8/03	Jeff Carroll
Bald Eagle	Meaney & Co/ Greystone EnvCons	8/03	Goal = 8/03	9/03	Christi Barlow
Yermo (Desert Yellowhead Plnt)	Meaney & Co Greystone EnvCons	8/03	Goal = 9/03	10/03	Christi Barlow
Yellow-billed Cuckoo	Accipiter Biol Cons	8/03	Goal = 8/03	9/03	Christi Barlow
Preble's Meadow Jumping Mouse	Real West Natural Resource Cons	9/03	Goal = 9/03	10/03	Christi Barlow
Colo Butterfly Plant	Meaney & Co Greystone EnvCons	9/03	Goal = 9/03	10/03	Corey O'brien
Blowout Penstemon	Meaney & Co Greystone EnvCons	9/03	Goal = 9/03	11/03	Corey O'brien
Wyoming Toad	Meaney & Co Greystone EnvCons	9/03	Goal = 10/03	11/03	Christi Barlow
Boreal Toad	Meaney & Co Greystone EnvCons	9/03	Goal = 9/03	10/03	Christi Barlow
Ute Ladies'-Tresses Orchid	Meaney & Co Greystone EnvCons	10/03	Goal = 10/03	11/03	Corey O'brien
Mountain Plover	Meaney & Co Greystone EnvCons	11/03	Goal = 11/03	12/03	Christi Barlow
Canada Lynx	Meaney & Co Greystone EnvCons	12/03	Goal = 12/03	1/04	Christi Barlow
Grizzly Bear	Meaney & Co Greystone EnvCons	1/04	Goal = 1/04	2/04	Christi Barlow
Gray Wolf	Meaney & Co Greystone EnvCons	2/04	Goal = 2/04	3/04	Christi Barlow
Blk-footed Ferret	Meaney & Co Greystone EnvCons	3/04	Goal = 3/04	3/04	Christi Barlow
Blk Tailed PD	Meaney & Co Greystone EnvCons	4/04	Goal = 4/04	5/04	Christi Barlow

Issues:

(1) Bald eagle template: (Stop order with contractors while waiting for template).
(2) Field Office education: (Process/flow established).
(3) Litigation caused adjustments to schedule and will continue
(4) Other states using as template so care was taken to perfect.
(5) Funding OK - $200K contractors/funding FWS/Chicago Botanical Garden
(6) Agreement with FWS signed by August 15 detailing process/annual review/solicitors review.

6

Attachment 2

FLOWCHART FOR HOW THE SECTION 7 PROCESS WORKS
As of October27, 2003

Programmatic Species-Specific Section 7 Consultation between the BLM and FWS On Wyoming BLM Resource Management Plans

---

Draft Programmatic Statewide Species-Specific RM Plan Biological Assessments (BAs) Received from Contractor includes Species Information, Activities Descriptions, and Effects Determinations broken out by Program within each RM Plan

↓

Draft BAs Distributed to Appropriate BLM Field Staff & FWS for Review via the BLM Intranet

↓

Final BAs w/requests for concurrence to FWS – Placed on BLM Internet

↓

Draft Biological Opinions (BOs) or Concurrence Letters from FWS to BLM Evaluating each Listed Species and Appropriate TCs/RPAs/RPMs Placed on BLM Internet

↓ ----> Public Input including scientific information
----> Review for RM Plan Consistency

FWS Finalizes BOs for each listed species – Placed on BLM Internet

↓

BLM Evaluates each RM Plan for any Allocation Changes

↓ **No Allocation Changes**

↓

RM Plan maintained
(Incorporate requirements via RM Plan maintenance or possibly amend, as appropriate)

↓ **Allocation Changes**

↓

RM Plan amendment initiated
-or-
Rolled into ongoing plan revisions

↓

Annual Review - see no. 7

7

Attachment 3 LIST OF BLM ACTIVITIES BY PROGRAM

LIST OF BLM ACTIVITIES

BLM Activity

Air Quality

1. Apply dust control measures
2. Collect meteorological and/or air quality data
3. Cover conveyors at mine sites

Cultural/Paleontological/Historical

1. Identify cultural resources
2. Photography
3. Inventory cultural resources
4. Developing interpretive sites
5. Use hand tools, power tools, heavy machinery
6. Field activities
7. Allow collection of invertebrate fossils
8. Stabilize deteriorating buildings
9. Surface disturbing activities
10. Map and collect surface material
11. Excavation
12. Stabilize erosion
13. Develop campgrounds
14. Cultural resource investigation

Fire Management

1. Fire suppression
2. Damage rehabilitation
3. Prescribed burning
4. Construct firelines
5. Use off-road vehicles
6. Use heavy equipment
7. Use of hand tools, off-road vehicles, and heavy machinery
8. Use bulldozers
9. Use chemical fire suppression agents
10. Bulldozers in riparian and wetland areas
11. Fire retardant drops containing chemical dyes

Forest Management

1. Rehabilitation surveys
2. Assess effects of grazing
3. Allow firewood collection
4. Timber harvesting
5. Planting harvested areas
6. Fencing regenerated areas
7. Clearcuts
8. Slash disposal
9. Allow harvest
10. Site regeneration
11. Stand replacement
12. Precommercial thinning
13. Fuelwood, posts, poles, Christmas trees, wildlings
14. Pursue legal access
15. Commercial thinning
16. Skidder-type yarding
17. Logging operations
16. Skidder-type yarding
17. Logging operations
18. Cable yarding
19. Roads and landings
20. Logging activity
21. Prescribed burning
22. Establish new seedlings
23. Chaining
24. Shearing
25. Road development
26. Install drain culverts, water bars, or ditches
27. Cut and remove diseased trees
28. Artificial regeneration
29. Slash will be lopped and scattered, roller chopped, or burned
30. Helicopter logging
31. Disease treatment by spraying
32. Spraying of Grasses and shrubs

Minerals

1. Study and exploration of coal resources
2. Open lands for oil and gas development
3. Lease with a "no surface occupancy" restriction
4. Lease with seasonal restrictions
5. Lease with other standard surface protection restrictions
6. Sand and gravel collection
7. Lease geothermal resources
8. Oil, gas, and mineral development
9. Issue leases
10. Open to geophysical exploration
11. Construction of roads, pads, and other facilities
12. Construction of new above-ground powerlines
13. Explore, lease, and develop oil, gas, coal, oil shale, and geothermal steam
14. Surface coal mining
15. Exploration drilling
16. Geophysical exploration
17. Increase human activity
18. Increase vehicular traffic

8

LIST OF BLM ACTIVITIES

BLM Activity

Hazardous Material

1. Provide warnings
2. Establish precautions
3. Use precautionary measures
4. Secure and dispose of hazardous waste discharged on public lands
5. Report, secure, and clean up public lands contaminated with hazardous wastes

Lands and Realty

1. Stock driveway withdrawals
2. Locatable mineral entry withdrawals
3. Lease acres for landfills
4. Establish protective withdrawals
5. Procure easements
6. Disposal or transfer of public lands through desert land entry, public sale, exchange, State of Wyoming indemnity selection, or Recreation and Public Purposes (R&PP) leases or patents
7. Designate existing routes as right-of-way corridors
8. Pursue public access
9. Pursue cooperative agreements
10. Leases and disposals
11. Develop stipulations
12. Issue rights-of-way
13. Temporary use permits
14. New withdrawals
15. Seek legal access to timber management areas
16. Fence revegetation sites
17. Block linear rights-of-way to vehicle use
18. Road construction
19. Construction of powerlines, communication towers, pipelines, irrigation ditches, and roads
20. Develop recreation site facilities
21. Designate corridors
22. Adjust corridors

Livestock Grazing

1. Designate stock trails
2. Livestock conversions
3. Livestock grazing
4. Fence improvement riparian habitat to exclude livestock
5. Provide access to water
6. Design grazing systems
7. Provide salt or mineral supplements
8. Use safe and effective prairie dog control measures
9. Modify kinds of livestock and season of livestock use
10. Perform project work to enhance and improve riparian zones
11. Improve resource conditions
12. Noxious weed control
13. Control predators
14. Vegetation manipulation projects
15. Change composition of existing vegetation
16. Manage leases
17. Develop management plans and agreements
18. Range improvement projects
19. Cancel or change driveways
20. Fence
21. Develop water catchments
22. Sagebrush spraying
23. Prescribed fire treatment
24. Adjust season of use, distribution, kind, class, and number of livestock
25. Implement new grazing systems
26. Establish salt stations
27. Develop reservoirs, springs, pipelines, and wells
28. Prescribed fire
29. Mechanical or biological vegetative treatments
30. Use heavy equipment

ORV Use

1. Designate closed, limited, or open areas for ORV Use
2. Post signs, maps, or brochures
3. Monitor off-road vehicle use
4. ORV rallies
5. Cross-country races and outings
6. Perform necessary tasks requiring off-road vehicle use

Recreation

1. Allow casual recreational use without charge
2. Restrict recreational use
3. Allow fishing and floatboating opportunities
4. Permit competitive recreational events
5. Pursue land acquisition
6. Allow camping
7. Require facilities to blend with the natural environment
18. Maintain public access
19. Pursue rights-of-way
20. Maintain or develop recreation sites and facilities
21. Monitor recreational use
22. Enforce recreation-oriented regulations
23. Patrol high-use areas and update recreational potential
24. Monitor, evaluate, and update recreational potential

LIST OF BLM ACTIVITIES

BLM Activity	
8. Designate road use	25. Conduct field inventories
9. Designate recreation areas	26. Place boundary signs
10. Allow fishing, boating, and hunting	27. Camping, hunting, fishing, off-road vehicle use
11. Develop management plans	28. Add interpretive markers
12. Designate ORV use	29. Add developments as opportunities arise
13. Identify hazards on the river	30. Develop campgrounds
14. Maintain developed and undeveloped recreation sites	31. Develop recreational facilities
15. Provide public facilities and continued access	32. Cut trees and firewood
16. Allow use of motorized over-the-snow vehicles	33. Construct and use roads
17. With some exceptions, limit motorized vehicles to existing trails	34. Commercial recreation uses
T&E Species	
1. Provide habitat	3. Close known locations to surface disturbing activities, mineral material sales, off-road vehicle use, and the use of explosives and blasting
2. Protect known populations	4. Conduct surveys
Vegetation	
1. Pursue the acquisition of additional riparian areas	6. Improve riparian habitat
2. Plant species surveys	7. Use species-specific insects, livestock grazing, mechanical methods, or chemical methods
3. Conduct prescribed burns	8. Spraying, burning, mechanical disturbances
4. Implement weed control programs	9. Precommercial tree thinning
5. Plant trees	10. Use of machinery or fire
Visual	
1. Exclude activities	2. Reclaim watershed projects and water wells
Wild Rivers	
1. Studies segments of river	
Wild Horse	
1. Monitoring	3. Herding, corralling, transporting
2. Roundups	
Geothermal	
1. Vehicle traffic	3. Pod and facility construction
2. Road construction	4. Powerline construction
Special Areas	
1. Protect petroglyphs, artifacts, and cultural deposits from weathering and vandalism	5. Guide supervised tours
2. Land exchange	6. Evaluate noxious weed and grasshopper control measures
3. Close areas where accelerated erosion is occurring	7. Logging and heavy equipment use restrictions
4. Apply restrictions on ground-disturbing activities	8. Develop recreational trails
Watershed/Water	
1. Develop pollution prevention plans	4. Design activities to promote reduction of channel erosion
2. Ensure rights to water-related projects are filed	5. Restore damaged wetlands or riparian areas
3. Delineate "no chemical use" buffer zones	
Water/Soils	
1. Apply seasonal closures	20. Develop riparian exclosures
2. Restrict activities such as mineral exploration and development, pipelines, powerlines, roads, recreation sites, fences, and wells	21. Improve forage
3. Land acquisition	22. Habitat improvement projects

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LIST OF BLM ACTIVITIES

BLM Activity	
4. Impose road closures	23. Manage timber
5. Acquire riverfront land	24. Manage access
6. Prohibit surface development	25. Modification of existing projects, such as fence modification
7. Easement acquisition	26. Construction of artificial structures
8. Monitor habitat	27. Management of other resource activities to conserve forage and protect habitat
9. Monitor public drinking water	28. Chemically control pests
10. Conduct inventories	29. Cutting, thinning, planting, seeding, pitting
11. Improve, maintain, and restore riparian areas	30. Herbicide treatments
12. Reestablish willows	31. Spraying of insecticides
13. Stream improvement practices	32. Use heavy machinery and hand tools
14. Vegetation manipulations	33. Construct stream crossings
15. Farming	34. Develop water facilities
16. Prescribed burning	35. Introduce species
17. Construct and maintain fences	36. Develop islands
18. Apply soil management practices	37. Improve range with mechanical treatment, burning, or other methods
19. Complete a groundwater study	
Soil/Water/Air	
1. Monitor soil erosion, water quality, and air quality	3. Reduce or eliminate erosion
2. Field activities	4. Use heavy equipment and hand tools
Soils	
1. Apply conservation practices	6. Use heavy machinery and hand tools
2. Use special construction and reclamation techniques	7. Removal of topsoil
3. Revegetation efforts	8. Restoration of surface drainage
4. Erosion control measures	9. Abandoned road reclamation
5. Restore damaged wetlands	
Riparian	
1. Livestock conversions	3. Fence
2. Herding, livestock driving	
Access	
1. Pursue access across private lands	3. Rehabilitate access roads no longer needed
2. Purchase rights-of-way or easements, land exchange, reciprocal rights-of-way	
Surface Disturbance Restrictions	
1. Restrict surface disturbance	

Attachment 4

Matrix – RM Plan & Species

RM Plan / Species	Buffalo	Cody	Grass Creek (Worland)	Great Divide (Rawlins)	Green River (Rock Springs)	Kemmerer	Lander	Newcastle	Pinedale	Platte River (Casper)	Snake River (Pinedale) [New]	Washakie (Worland)
Kendall Warm Springs Dace (E)									XXX			
Desert Yellowhead (T)							XXX			XXX		
Wyoming Toad (E)				XXX								
Blowout Penstemon (E)				XXX								
Colorado Butterfly Plant (T)				XXX						XXX		
Preble's Meadow Jumping Mouse (T)				XXX						XXX		
Bald Eagle (T)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Black-footed Ferret (E)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Canada Lynx (T)	XXX	XXX		XXX	XXX	XXX	XXX		XXX		XXX	
Grizzly Bear (T)		XXX	XXX			XXX	XXX		XXX		XXX	
Ute Ladies'-Tresses (T)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Gray Wolf (Exp–popln)		XXX	XXX			XXX	XXX		XXX		XXX	
Whooping Crane (Exp-Popln)				Exterp	Exterp	Exterp	Exterp		Exterp		Exterp	

Black-tailed Prairie Dog (C)	XXX	XXX		XXX			xxx	XXX		XXX		???
Southern Rockies Popln Boreal Toad (C)				XXX	xxx	xxx						
Yellow-billed Cuckoo (C)				xxx	XXX	xxx			xxx			

XXX = species confirmed/or habitat occurs within the area evaluated in the RM Plan
xxx = species unconfirmed/but possibly found in the Field Office area. Will not be evaluated in the RM Plan unless additional information confirms presence of individuals or habitat.

a. If a species is found in only one RM Plan area, then the respective F.O. would prepare the maintenance action or amendment.
b. If a species is found in two or more RM Plan area, then the Wyoming State Office staff would prepare a "multi-office" maintenance action or amendment for all areas affected with input from each field office.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

In Reply Refer To:

ES-61411/W.02/WY8241

March 22, 2004

Memorandum

To: James Murkin, Field Manager, Bureau of Land Management, Casper Field Office, Casper, Wyoming

From: Brian T. Kelly, Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming

Subject: Species List for the Casper Field Office

This is the U.S. Fish and Wildlife Service's (Service) current list of endangered, threatened, and candidate species which may occur within the Bureau of Land Management, Casper Field Office's (Bureau) area of management. This list is provided as a general reference for the Bureau to use when evaluating their responsibilities under section 7 of the Endangered Species Act of 1973 (Act), as amended, 50 CFR §402.13. In addition, we have included information that may be useful in the development of a project assessment for listed species, as well as other areas of Service trust authorities such as the Migratory Bird Treaty Act (MBTA),16 U.S.C. 703, the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668, and wetlands.

Although we intend to update this list annually or when additions or changes in species' status occur, the Bureau should contact this office to verify the list before completing any major Federal construction activity as identified under section 7(c) of the Act. If you have any questions regarding this letter or your responsibilities under the Act, please contact Trish Sweanor at the letterhead address or phone (307) 772-2374, extension 39.

Attachments (2)

cc: BLM, T&E Coordinator, Cheyenne, WY (J. Carroll)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (V. Stelter)
WGFD, Non-Game Coordinator, Lander, WY (B. Oakleaf)

Attachment 1

Threatened and Endangered Species
Bureau of Land Management, Casper Field Office

Updated March 18, 2004

Species	Status	Expected Occurrence
Bald eagle (*Haliaeetus leucocephalus*)	Threatened	Found throughout state
Black-footed ferret (*Mustela nigripes*)	Endangered	Prairie dog towns
Blowout penstemon (*Penstemon haydenii*)	Endangered	Sand dunes
Ute ladies'-tresses (*Spiranthes diluvialis*)	Threatened	Seasonally moist soils and wet meadows of drainages below 7000 feet
Colorado butterfly plant (*Gaura neomexicana coloradensis*)	Threatened	Wet meadows in floodplains
Preble's meadow jumping mouse (*Zapus hudsonius preblei*)	Threatened	Riparian areas east of Laramie Mtns and south of North Platte River
Critical habitat for Preble's meadow jumping mouse	Designated	Varying widths (360 to 394 feet from stream edge) along portions of Cottonwood, Chugwater, Lodgepole Creeks and some tributaries

Platte River Species: If the proposed action will lead to water depletions (consumption) in the Platte River System, impacts to threatened and endangered species inhabiting the downstream reaches of these systems should be included in the evaluation. Platte River system depletions may affect the whooping crane (*Grus americana*), interior least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), pallid sturgeon (*Scaphirhynchus albus*), bald eagle (*Haliaeetus leucocephalus*), Eskimo curlew (*Numenius borealis*), and western prairie fringed orchid (*Platanthera praeclara*). In addition, depletions may contribute to the destruction or adverse modification of designated critical habitat for the whooping crane, and proposed critical habitat for the northern Great Plains breeding population of the piping plover.

Attachment 2: 2004 Species List for the Bureau of Land Management, Casper Field Office

Federal Agency Responsibilities

The U.S. Fish and Wildlife Service (Service) has responsibility, under a number of Federal laws, treaties, Executive Orders, and memoranda of agreement, for the conservation and management of fish and wildlife resources. Some of these same authorities also require other Federal agencies to consider, avoid, or prevent adverse impacts to fish, wildlife, and wetland resources. To ensure resources are afforded adequate consideration and protection, Federal agencies are often required to consult with the Service regarding potential impacts their actions may have on fish and wildlife resources.

When reviewing proposed actions of other agencies, our office normally focuses on three broad categories of trust resources: (1) threatened, endangered, and candidate species, (2) migratory birds, and (3) wetlands and riparian areas. The Service provides recommendations for protective measures for threatened and endangered species in accordance with the Endangered Species Act (Act) of 1973, as amended, 16 U.S.C. 1531 *et seq*. Protective measures for migratory birds are provided pursuant to the Migratory Bird Treaty Act (MBTA),16 U.S.C. 703 and Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668. Wetlands should be protected pursuant to Section 404 of the Clean Water Act, Executive Order 11990 (wetland protection) and Executive Order 11988 (floodplain management) as well as the goal of "no net loss of wetlands." Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act, 48 Stat. 401, as amended; 16 U.S.C. 661 *et seq*., and the Fish and Wildlife Act of 1956, as amended, 70 Stat. 1119, 16 U.S.C. 742a-742j.

Federal agency actions may range from small, site specific, short duration projects to expansive, long-term programs. Because of the wide range of possible actions, the Service provides the following comments with the understanding that this list of comments may not be all inclusive or may not be applicable for each Federal project.

Section 7(c) of the Act requires the preparation of a biological assessment for any Federal action that is a major construction activity to determine the effects of the proposed action on listed and proposed species. If a biological assessment is not required (i.e., all other actions), the lead Federal agency is responsible for review of proposed activities to determine whether listed species will be affected. If it is determined that the proposed activities may affect a listed species, you should contact the Service to discuss consultation requirements.

If it is determined that any Federal agency program or project "is likely to adversely affect" any listed species, formal consultation should be initiated with this office. Alternatively, informal consultation can be continued so the Service can assist you to determine how the project could be modified to reduce impacts to listed species to the "not likely to adversely affect" threshold. If it is concluded that the project "is not likely to adversely affect" listed species, you should request

the Service to review the assessment and concur with the determination of "not likely to adversely affect."

For those actions where a biological assessment is necessary, it should be completed within **180 days** of receipt of a species list, but can be extended by mutual agreement between the lead agency and the Service. If the assessment is not initiated within 90 days of receipt of a species list, the list of threatened and endangered species should be verified with the Service prior to initiation of the assessment. The biological assessment may be undertaken as part of the agency's compliance of section 102 of the National Environmental Policy Act (NEPA), and incorporated into the NEPA documents. The Service recommends that biological assessments include:

1. Description of the project.
2. Description of the specific area potentially affected by the action.
3. Current status and habitat use of threatened and endangered species in the project area.
4. Discussion of the methods used to determine the information in item 3.
5. Direct and indirect impacts of the project to threatened and endangered species.
6. Analysis of the proposed action effects on listed and proposed species and their habitats including cumulative impacts (pursuant to the Act) from State or private projects.
7. Measures that can potentially reduce or eliminate adverse impacts to threatened and endangered species.
8. The expected status of threatened and endangered species in the future (short and long term) during and after project completion.
9. Determination of "is likely to adversely affect" or "is not likely to adversely affect" for listed species.
10. Determination of "is likely to jeopardize" or "is not likely to jeopardize" for proposed species.
11. Alternatives to the proposed action considered, a summary of how impacts of those alternatives on listed and proposed species would differ from the proposed actions, and the reasons for not selecting those alternatives.
12. Citation of literature and personal contacts used in the assessment.

Migratory Birds

Under the MBTA and BGEPA, the Federal agency has a mandatory obligation to protect the many species of migratory birds, including eagles and other raptors which may occur on lands under their jurisdiction. In order to promote the conservation of migratory bird populations and their habitats, the Service recommends that the Federal agency implement those strategies outlined within the Memorandum of Understanding directed by the President of the U.S. under the Executive Order 13186, where possible.

During project planning analysis of the following information is recommended to determine project effects to migratory birds:

1. The current status and habitat use of migratory birds in the project area. This may include number of individuals, breeding pairs, population trends, active nests within and adjacent to the project area.

2. Analysis of the proposed action on migratory bird species and their habitats.

3. Measures that will reduce or eliminate adverse impacts to migratory birds including protective buffers, seasonal restrictions, maintenance of habitat within project area, raptor-proofing designs for powerlines, and netting of waste pits.

4. The projected short and long term impacts to migratory birds and their trends during and after project completion using monitoring, modeling and current literature.

Potential adverse effects to migratory birds from power lines should be identified and every attempt to mitigate such effects should be implemented. Structures that are identified as affecting birds should be made safe to prevent subsequent mortalities. If you determine that power poles and/or stretches of power line are resulting in electrocution of migratory birds, especially raptors, the Service requests that specific information be documented regarding these mortalities. Based on regulations pursuant to the MBTA and BGEPA, collecting, possessing, or moving the carcass can only be done by, State Game Wardens, Service Refuge Officers, Service Special Agents or persons holding a valid salvage permits issued by the Service and the applicable State. When a migratory bird mortality is observed the Service recommends that as much of the following information as possible be documented: legal location, all identifying numbers from the nearest power pole, date of observation, species, GPS location, photographs (pole number, top section of the pole, and the dead bird) and directions to the scene. Additionally, please contact Dominic Domenici of the Service's Law Enforcement Office at phone (307) 261-6365 or email dominic_domenici@fws.gov to report your observation and obtain further guidance. The Service appreciates your efforts to protect migratory birds.

Candidate Species

Many Federal agencies have policies to protect candidate species from further population declines. The black-tailed prairie dog (*Cynomys ludovicianus*) is a candidate species for listing under the Act and the Service would appreciate receiving any information available on its status. If this species is listed prior to the completion of a project, unnecessary delays may be avoided by considering project impacts now. Should the black-tailed prairie dog be proposed for listing, the Federal agency would be required to confer with the Service if they determine their action (e.g. approval of the project) would likely jeopardize the continued existence of this species.

5

Wetlands

The functions and values of wetlands are well documented and are especially important in the arid west. Substantial degradation diminishes the effectiveness of wetlands to function as food, cover, and breeding sites for wetland dependent species; sediment transport systems; water retention/storage sites; contaminant sinks; and chemical exchange sites. To ensure the Service has sufficient information to assess project impacts on wetlands, assessments should include:

1. Enumeration of the acreage of wetlands, by type, impacted by the proposed action.

2. Discussion of why wetlands cannot be avoided.

3. Description of the functions and values of wetlands present including sediment transport, value as water storage sites, value to aquatic and terrestrial organisms, value as contaminant sinks and associated risks of water removal.

4. Measures that will reduce or eliminate adverse impacts to wetlands such as a mitigation plan to offset unavoidable impacts, protective buffers, seasonal and physical restrictions, maintenance of natural hydrograph, and development and implementation of a monitoring program to track the effectiveness of mitigation measures.

5. Results of wetland monitoring or management activities in, or adjacent to, the proposed project site.

6. The anticipated short and long term effects to wetland and riparian areas during and after project completion.

We recommend the Federal agency address each of the above concerns where applicable to the project. Without this information it may be difficult for the Service to effectively review assessments.

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NATIVE AMERICAN CONSULTATION LETTERS

Slone 10-23-03
CSA 10/24/03

1610/Casper RMP

7003 2410 0000 4928 0535
7003 2410 0000 4928 0528

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

OCT 23 2003

Mr. Jay St. Goddard
Chairman
Blackfeet Tribal Business Council
P.O. Box 850
Browning, MT 59417

Dear Mr. Goddard:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

We are contacting tribes who have oral traditions or have previously expressed cultural concerns relating to the planning area, or who are documented to have occupied or used the area during historic times. We request your comments on any issues or concerns regarding the management of this planning area. We would appreciate any historical information on the use and significance of the planning area, such as places of traditional, religious, or cultural importance that your tribe wishes the BLM to consider in determining tribal needs for use, access, or other special management. Any information you provide will be used in a respectful manner, and anything you would like to share with BLM but would prefer not be made public will be kept confidential.

The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost-the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

If possible, we request that you identify traditional leaders or elders who you determine should be contacted in addition to yourself, to express their interests or concerns regarding the Casper RMP. We look forward to working with you and your tribal members or authorized representatives who have considerable knowledge of tribal history and concerns.

While your input and involvement are welcomed throughout the planning process, there are certain points in the process where your participation is very important. Initially, we are requesting data, input, and identification of issues during the formal scoping period. Your input will also be important during the early stage of developing the alternatives for the draft Environmental Impact Statement (EIS). Later, during the 90-day public review and comment period for the draft EIS, your input will help us prepare the final EIS and the Record of Decision for the Casper RMP.

We will devote careful consideration to all of your comments as we make decisions about the future management of the BLM-administered public lands and resources. We will keep you informed of the status of the planning effort throughout the process. We look forward to working cooperatively to address your tribe's concerns in a thoughtful and respectful manner.

The enclosed Return Form is provided for your convenience in responding to this letter, should you wish to reply in that manner.

If you would like further information or want to request a meeting, please contact Linda Slone, Project Manager, at (307) 261-7520 or email Linda_Slone@blm.gov. With regard to cultural heritage issues, please contact Christopher Arthur, the cultural resource specialist on the planning team, at (307) 261-7501 or email Chris_Arthur@blm.gov. We will contact you soon by telephone to discuss your tribe's concerns and issues. Thank you for your time and consideration, and we look forward to hearing from you.

Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Ms. Marilyn Parsons
Blackfeet Tribal Planning Department
P.O. Box 850
Browning, MT 59417 – 0535

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

Appendix C – Public Involvement, Consultation, and Coordination

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2976-2421
Return Receipt Requested

Mr. Jay St. Goddard
Chairman
Blackfeet Tribal Business Council
P.O. Box 850
Browning, MT 59417

Dear Mr. St. Goddard:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

We would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

We would be happy to meet you or your representatives here in the area or in your offices to discuss the project. We would also be pleased to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. If you have comments concerning this RMP, please advise us within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc:
Ms. Marilyn Parsons
Blackfeet Tribal Planning Department
P.O. Box 850
Browning, MT 59417

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2 _BFTL. doc:07/30/04mtb

1610 Casper RMP

Lillard 1-28-05
C. Anderson 1/28/05
D. Ullrey 1/28/05

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-5842
Return Receipt Requested

Mr. Jay St. Goddard
Chairman
Blackfeet Tribal Business Council
P.O. Box 850
Browning, MT 59417

Dear Mr. St. Goddard:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

Cedar Ridge is the only known Traditional Cultural Property (TCP) in the planning area. Under the Preferred Alternative, the TCP would be 1) open to oil and gas leasing subject to no surface occupancy; this restriction would be applicable to all other types of surface development including but not limited to rights-of-way, and range improvements, 2) withdrawn from locatable mineral entry, 3) closed to disposal of mineral materials, and 4) livestock grazing would continue but use would be managed to meet TCP objectives. Additionally, a controlled surface use restriction would be applied to all surface development proposals in a viewshed surrounding the TCP as far south as the Arminto/Lost Cabin Road and Badwater Road to the north. Surface disturbing activities in this viewshed area would be minimized by using techniques such as directional drilling and well-twinning wherever practicable. Under all alternatives no surface development would be allowed on the Spanish Diggings prehistoric quarry. Under the Preferred Alternative, the minimum cultural resource block inventory size on Pine Ridge in Natrona and Converse counties, Wyoming would be 40 acres with linear inventories covering a minimum of 100 feet either side of surface disturbance.

A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

I would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

I would be happy to meet you or your representatives at this office or in your offices to discuss the RMP alternatives. I would also be pleased to conduct tours of the planning area to discuss important archeological sites or other areas of interest you identify. Should you have any questions please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc: Ms. Marilyn Parsons
Blackfeet Tribal Planning Department
P.O. Box 850
Browning, MT 59417

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2 _BFTL. doc:01/21/05mtb

Appendix C – Public Involvement, Consultation, and Coordination

1610/Casper RMP Revision

LSlone 11-16-05
CArthur 11/14/05

7005-0350-0001-6066-6218
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 1 8 2005

Mr. Jay St. Goddard
Chairman
Blackfeet Tribal Business Council
P.O. Box 850
Browning, MT 59417

Dear Mr. St. Goddard:

The Casper Field Office began revising its land use plan in 2002. The Casper Resource Management Plan (RMP) will serve as our general direction for all resource and land use management decisions for the BLM-administered public lands and resources in our administrative area. The plan will guide the use, protection, and management of natural and cultural resources on the public lands in most of Natrona County and all of Converse, Goshen and Platte counties in Wyoming. BLM's Lander Field Office administers public land in the southwestern corner of Natrona County.

In an effort to keep you informed of the status of our planning effort, we are again contacting tribes who have previously expressed cultural concerns relating to the planning area, or whose traditional lands coincide with the planning area. To date, consultation on the RMP revision process with your tribe has included correspondence, telephone contacts, and meetings when requested.

We greatly appreciate the coordination we have accomplished with you in the past and would like to continue our relationship. BLM recently modified its policy on working with tribal governments during land use plan revisions. This new policy affords you opportunities to provide further input into this process. In addition to the government-to-government consultation that has been ongoing throughout the process, we would also like to invite you to become a cooperating agency. Cooperating agency status is available to government entities with jurisdiction by law or special expertise. A cooperating agency provides staff to the BLM planning team to develop analysis for which they have particular expertise. The cooperating agency must develop a Memorandum of Understanding with the federal agency and must fund its own participation. Please note that the tribe's participation as a cooperating agency does not satisfy the BLM's obligation to consult on a government-to-government basis. Therefore, regardless of your tribe's decision to participate or not as a cooperating agency, our government-to-government consultation will continue.

Some of the other government entities who are cooperating agencies on the Casper RMP include the State of Wyoming, the local County Governments, and the local Conservation Districts. Although alternatives have been developed, you still have the opportunity to help us refine the management actions as we work through completion of the Draft Environmental Impact Statement (EIS), Final EIS, and Record of Decision. This opportunity is available to you both through the cooperating agency process and through the existing government-to-government consultation process.

We value your knowledge, concerns, and perspectives relating to the planning area. If you would like further information regarding cooperating agency status, please contact Linda Slone, Project Manager, at 307-261-7520. With regard to cultural heritage issues, you may wish to contact Christopher Arthur, Archaeologist, at 307-261-7501. Thanks for your continued participation in the Casper RMP revision process.

Sincerely,

JAMES R. MURRAY

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Blackfeet_Tribal

C Custer 10/23/03
Gillette 10-23-03
1610/Casper RMP

7002 2410 0000 4928 0467
7002 2410 0000 4928 0450
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

OCT 23 2003

Mr. Gregg Bourland, Chairman
Cheyenne River Sioux Tribal Council
P.O. Box 590
Eagle Butte, SD 57625

Dear Mr. Bourland:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

We are contacting tribes who have oral traditions or have previously expressed cultural concerns relating to the planning area, or who are documented to have occupied or used the area during historic times. We request your comments on any issues or concerns regarding the management of this planning area. We would appreciate any historical information on the use and significance of the planning area, such as places of traditional, religious, or cultural importance that your tribe wishes the BLM to consider in determining tribal needs for use, access, or other special management. Any information you provide will be used in a respectful manner, and anything you would like to share with BLM but would prefer not be made public will be kept confidential.

The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

If possible, we request that you identify traditional leaders or elders who you determine should be contacted in addition to yourself, to express their interests or concerns regarding the Casper RMP. We look forward to working with you and your tribal members or authorized representatives who have considerable knowledge of tribal history and concerns.

While your input and involvement are welcomed throughout the planning process, there are certain points in the process where your participation is very important. Initially, we are requesting data, input, and identification of issues during the formal scoping period. Your input will also be important during the early stage of developing the alternatives for the draft Environmental Impact Statement (EIS). Later, during the 90-day public review and comment period for the draft EIS, your input will help us prepare the final EIS and the Record of Decision for the Casper RMP.

We will devote careful consideration to all of your comments as we make decisions about the future management of the BLM-administered public lands and resources. We will keep you informed of the status of the planning effort throughout the process. We look forward to working cooperatively to address your tribe's concerns in a thoughtful and respectful manner.

The enclosed Return Form is provided for your convenience in responding to this letter, should you wish to reply in that manner.

If you would like further information or want to request a meeting, please contact Linda Slone, Project Manager, at (307) 261-7520 or email Linda_Slone@blm.gov. With regard to cultural heritage issues, please contact Christopher Arthur, the cultural resource specialist on the planning team, at (307) 261-7501 or email Chris_Arthur@blm.gov. We will contact you soon by telephone to discuss your tribe's concerns and issues. Thank you for your time and consideration, and we look forward to hearing from you.

Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Mr. Sebastian "Bronco" LeBeau
Tribal Historic Preservation Officer
Cheyenne River Sioux Tribe
P.O. Box 590
Eagle Butte, SD 57625 — 0467

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmpl

Appendix C – Public Involvement, Consultation, and Coordination

1610 Casper RMP

AUG 0 5 2004

Certified Mail Number 7004-0550-0001-2476-2438
Return Receipt Requested

Mr. Gregg Bourland, Chairman
Cheyenne River Sioux Tribal Council
P.O. Box 590
Eagle Butte, SD 57625

Dear Mr. Bourland:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

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Sincerely,

James Murkin
Field Manager

cc: Mr. James Picotte
Tribal Historic Preservation Officer
Cheyenne River Sioux Tribe
PO Box 590
Mission, SD 57625

Lillone 1-28-05
Cawthorn 1/28/05
DWhyde 1/28/05

1610 Casper RMP

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-5859
Return Receipt Requested

Mr. Gregg Bourland, Chairman
Cheyenne River Sioux Tribal Council
P.O. Box 590
Eagle Butte, SD 57625

Dear Mr. Bourland:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

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A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

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Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc: Mr. James Picotte
Tribal Historic Preservation Officer
Cheyenne River Sioux Tribe
PO Box 590
Mission, SD 57625

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter3 _CRSN. doc:01/21/05mtb

1610/Casper RMP Revision

LSlone 11-16-05
CArthur 11/16/05

7005-0390-0001-6066-6164
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Gregg Bourland, Chairman
Cheyenne River Sioux Tribal Council
P.O. Box 590
Eagle Butte, SD 57625

NOV 1 8 2005

Dear Mr. Bourland:

The Casper Field Office began revising its land use plan in 2002. The Casper Resource Management Plan (RMP) will serve as our general direction for all resource and land use management decisions for the BLM-administered public lands and resources in our administrative area. The plan will guide the use, protection, and management of natural and cultural resources on the public lands in most of Natrona County and all of Converse, Goshen and Platte counties in Wyoming. BLM's Lander Field Office administers public land in the southwestern corner of Natrona County.

In an effort to keep you informed of the status of our planning effort, we are again contacting tribes who have previously expressed cultural concerns relating to the planning area, or whose traditional lands coincide with the planning area. To date, consultation on the RMP revision process with your tribe has included correspondence, telephone contacts, and meetings when requested.

We greatly appreciate the coordination we have accomplished with you in the past and would like to continue our relationship. BLM recently modified its policy on working with tribal governments during land use plan revisions. This new policy affords you opportunities to provide further input into this process. In addition to the government-to-government consultation that has been ongoing throughout the process, we would also like to invite you to become a cooperating agency. Cooperating agency status is available to government entities with jurisdiction by law or special expertise. A cooperating agency provides staff to the BLM planning team to develop analysis for which they have particular expertise. The cooperating agency must develop a Memorandum of Understanding with the federal agency and must fund its own participation. Please note that the tribe's participation as a cooperating agency does not satisfy the BLM's obligation to consult on a government-to-government basis. Therefore, regardless of your tribe's decision to participate or not as a cooperating agency, our government-to-government consultation will continue.

Some of the other government entities who are cooperating agencies on the Casper RMP include the State of Wyoming, the local County Governments, and the local Conservation Districts. Although alternatives have been developed, you still have the opportunity to help us refine the management actions as we work through completion of the Draft Environmental Impact Statement (EIS), Final EIS, and Record of Decision. This opportunity is available to you both through the cooperating agency process and through the existing government-to-government consultation process.

We value your knowledge, concerns, and perspectives relating to the planning area. If you would like further information regarding cooperating agency status, please contact Linda Slone, Project Manager, at 307-261-7520. With regard to cultural heritage issues, you may wish to contact Christopher Arthur, Archaeologist, at 307-261-7501. Thanks for your continued participation in the Casper RMP revision process.

Sincerely,

JAMES K. MURRAY

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Cheyenne_River

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1163
Return Receipt Requested

Mr. Johnny Wauqua
Chairman
Comanche Tribe of Oklahoma
HC 32 Box 1720
Lawton, OK 73502

Dear Mr. Wauqua:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

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We would be happy to meet you or your representatives here in the area or in your offices to discuss the within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc: Mr. James Picotte
Tribal Historic Preservation Officer
Cheyenne River Sioux Tribe
PO Box 590
Mission, SD 57625

B

1610 Casper RMP

JAN 3 1 2005

Certified Mail Number
Return Receipt Requested

Mr. Wallace Coffey
Chairman
Comanche Tribe of Oklahoma
HC 32 Box 1720
Lawton, OK 73502

Dear Mr. Coffey:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

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Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc:
Jimmy Arterberry
P.O. Box 908
Lawton, OK 73502

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter3 _CTO. doc:01/21/05mtb

1610/Casper RMP Revision

LSlone 11-16-05 CSArthur 11/16/05

7005-0390-0001-6066-6171
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 1 8 2005

Mr. Wallace Coffey
Chairman
Comanche Tribe of Oklahoma
HC 32, Box 1720
Lawton, OK 73502

Dear Mr. Coffey:

The Casper Field Office began revising its land use plan in 2002. The Casper Resource Management Plan (RMP) will serve as our general direction for all resource and land use management decisions for the BLM-administered public lands and resources in our administrative area. The plan will guide the use, protection, and management of natural and cultural resources on the public lands in most of Natrona County and all of Converse, Goshen and Platte counties in Wyoming. BLM's Lander Field Office administers public land in the southwestern corner of Natrona County.

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We value your knowledge, concerns, and perspectives relating to the planning area. If you would like further information regarding cooperating agency status, please contact Linda Slone, Project Manager, at 307-261-7520. With regard to cultural heritage issues, you may wish to contact Christopher Arthur, Archaeologist, at 307-261-7501. Thanks for your continued participation in the Casper RMP revision process.

Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Comanche_20051101

LSlone 10-23-0
10/23/03
1610/Casper RMP

7002 2410 0000 4978 0542

OCT 2 3 2003

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Donald Matt
Chairman
Salish & Kootenai Tribal Council
P.O. Box 278
Pablo, MT 59855

Dear Mr. Matt:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

We are contacting tribes who have oral traditions or have previously expressed cultural concerns relating to the planning area, or who are documented to have occupied or used the area during historic times. We request your comments on any issues or concerns regarding the management of this planning area. We would appreciate any historical information on the use and significance of the planning area, such as places of traditional, religious, or cultural importance that your tribe wishes the BLM to consider in determining tribal needs for use, access, or other special management. Any information you provide will be used in a respectful manner, and anything you would like to share with BLM but would prefer not be made public will be kept confidential.

The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

If possible, we request that you identify traditional leaders or elders who you determine should be contacted in addition to yourself, to express their interests or concerns regarding the Casper RMP. We look forward to working with you and your tribal members or authorized representatives who have considerable knowledge of tribal history and concerns.

While your input and involvement are welcomed throughout the planning process, there are certain points in the process where your participation is very important. Initially, we are requesting data, input, and identification of issues during the formal scoping period. Your input will also be important during the early stage of developing the alternatives for the draft Environmental Impact Statement (EIS). Later, during the 90-day public review and comment period for the draft EIS, your input will help us prepare the final EIS and the Record of Decision for the Casper RMP.

We will devote careful consideration to all of your comments as we make decisions about the future management of the BLM-administered public lands and resources. We will keep you informed of the status of the planning effort throughout the process. We look forward to working cooperatively to address your tribe's concerns in a thoughtful and respectful manner.

The enclosed Return Form is provided for your convenience in responding to this letter, should you wish to reply in that manner.

If you would like further information or want to request a meeting, please contact Linda Slone, Project Manager, at (307) 261-7520 or email Linda_Slone@blm.gov. With regard to cultural heritage issues, please contact Christopher Arthur, the cultural resource specialist on the planning team, at (307) 261-7501 or email Chris_Arthur@blm.gov. We will contact you soon by telephone to discuss your tribe's concerns and issues. Thank you for your time and consideration, and we look forward to hearing from you.

Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1127
Return Receipt Requested

Mr. Donald Matt
Chairman
Salish & Kootenai Tribal Council
P.O. Box 278
Pablo, MT 59855

Dear Mr. Matt:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

We would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

We would be happy to meet you or your representatives here in the area or in your offices to discuss the project. We would also be pleased to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. If you have comments concerning this RMP, please advise us within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc:
WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2 _KSTL. doc:07/30/04mtb

1610 Casper RMP

Lt me 1-28-05 C Guthrie 1/28/05 D Wilde 1/28/05

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-5880
Return Receipt Requested

Mr. Donald Matt
Chairman
Salish & Kootenai Tribal Council
P.O. Box 278
Pablo, MT 59855

Dear Mr. Matt:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

Cedar Ridge is the only known Traditional Cultural Property (TCP) in the planning area. Under the Preferred Alternative, the TCP would be 1) open to oil and gas leasing subject to no surface occupancy; this restriction would be applicable to all other types of surface development including but not limited to rights-of-way, and range improvements, 2) withdrawn from locatable mineral entry, 3) closed to disposal of mineral materials, and 4) livestock grazing would continue but use would be managed to meet TCP objectives. Additionally, a controlled surface use restriction would be applied to all surface development proposals in a viewshed surrounding the TCP as far south as the Arminto/Lost Cabin Road and Badwater Road to the north. Surface disturbing activities in this viewshed area would be minimized by using techniques such as directional drilling and well-twinning wherever practicable. Under all alternatives no surface development would be allowed on the Spanish Diggings prehistoric quarry. Under the Preferred Alternative, the minimum cultural resource block inventory size on Pine Ridge in Natrona and Converse counties, Wyoming would be 40 acres with linear inventories covering a minimum of 100 feet either side of surface disturbance.

A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentialtty of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

I would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

I would be happy to meet you or your representatives at this office or in your office to discuss the RMP alternatives. I would also be pleased to conduct tours of the planning area to discuss important archeological sites or other areas of interest you identify. Should you have any questions please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc:
Clarinda Burke
Salish & Kootenai Tribe
PO Box 278
Pablo, MT 59885

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter3 _KSTL. doc:01/21/05mtb

1610/Casper RMP Revision

LSlone 11-16-05
CArthur 11/16/05

7005-0390-0001-6066-6119
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 18 2005

Mr. Donald Matt
Chairman
Salish & Kootenai Tribal Council
P.O. Box 278
Pablo, MT 59855

Dear Mr. Matt:

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In an effort to keep you informed of the status of our planning effort, we are again contacting tribes who have previously expressed cultural concerns relating to the planning area, or whose traditional lands coincide with the planning area. To date, consultation on the RMP revision process with your tribe has included correspondence, telephone contacts, and meetings when requested.

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Sincerely,

JAMES K. MURRIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Salish_Kootenai

LSlone 10.23.03
10/23/03
1610/Casper RMP

7002 2410 0000 4928 0511
7002 2410 0000 4928 0504

OCT 2 3 2003

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Carl Venne, Chairman
Crow Tribal Council
P.O. Box 159
Crow Agency, MT 59022

Dear Mr. Venne:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

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The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

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In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

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Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Mr. Darrin Old Coyote
Cultural Director
Crow Tribal Administration
P.O. Box 159
Crow Agency, MT 59022 – 0511

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1097
Return Receipt Requested

Mr. Carl Venne, Chairman
Crow Tribal Council
P.O. Box 159
Crow Agency, MT 59022

Dear Mr. Venne:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

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Sincerely,

James Murkin
Field Manager

cc:

Mr. Darrin Old Coyote
Cultural Director
Crow Tribal Administration
P.O. Box 159
Crow Agency, MT 59022

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2 _CTL. doc:07/30/04mtb

1610 Casper RMP

Lflone
1-28-05
Cathy
1/28/05
D. Lehfeldt
1/28/05

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-5826
Return Receipt Requested

Mr. Carl Venne, Chairman
Crow Tribal Council
P.O. Box 159
Crow Agency, MT 59022

Dear Mr. Venne:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

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A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

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I would be happy to meet you or your representatives at this office or in your office to discuss the RMP alternatives. I can come to your office one day or evening during the week of February 21, 2005. I would also be pleased to conduct tours of the planning area to discuss important archeological sites or other areas of interest you identify. Should you have any questions please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc:
Mr. Darrin Old Coyote
Cultural Director
Crow Tribal Administration
P.O. Box 159
Crow Agency, MT 59022

Mr. George Reed
Crow Cultural Committee
PO Box 1094
Crow Agency MT 59022

WSO 930 (Nowak)

WSO 930 (Capron)
ch/Letter3 _CTL. doc:01/21/05mtb

1610/Casper RMP Revision

APR 2 6 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. George Reed
Crow Cultural Committee
P.O. Box 1094
Crow Agency, MT 59022

Dear Mr. Reed:

On February 23, 2005, I met with you and discussed the new Resource Management Plan (RMP) the Casper Field Office is preparing. BLM has prepared a new map to help you and the Elders show us the general locations of cultural and spiritual interest to the Tribe. Surface ownership as well as areas of high development potential for oil and gas are shown on the map. I have enclosed two copies -- one for you to mark on and return to me, and another copy for you to keep.

The map of the Crow area of interest in Montana and Wyoming is still being prepared. As soon as the map is completed, I will mail it to you.

I would be happy to meet you again after you have had a chance to examine the maps. I would also be happy to arrange tours of the planning area, including important archeological sites or other areas of interest to you. Should you have any questions, please either contact me at the above address and phone number or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosure

cc: Mr. Darrin Old Coyote
Cultural Director
Crow Tribal Administration
P.O. Box 159
Crow Agency, MT 59022

Mr. Carl Venne, Chairman
Crow Tribal Council
P.O. Box 159
Crow Agency, MT 59022

bcc: WSO 930 (Nowak)
WSO 930 (Capron) LCollins:so:4/26/05:LETTER4_CTL

1610/Casper RMP Revision

LSlone 11-16-05
CArthur 11/16/05

7005-0350-0001-6066-6188
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 1 8 2005

Mr. Carl Venne, Chairman
Crow Tribal Council
P.O. Box 159
Crow Agency, MT 59022

Dear Mr. Venne:

The Casper Field Office began revising its land use plan in 2002. The Casper Resource Management Plan (RMP) will serve as our general direction for all resource and land use management decisions for the BLM-administered public lands and resources in our administrative area. The plan will guide the use, protection, and management of natural and cultural resources on the public lands in most of Natrona County and all of Converse, Goshen and Platte counties in Wyoming. BLM's Lander Field Office administers public land in the southwestern corner of Natrona County.

In an effort to keep you informed of the status of our planning effort, we are again contacting tribes who have previously expressed cultural concerns relating to the planning area, or whose traditional lands coincide with the planning area. To date, consultation on the RMP revision process with your tribe has included correspondence, telephone contacts, and meetings when requested.

We greatly appreciate the coordination we have accomplished with you in the past and would like to continue our relationship. BLM recently modified its policy on working with tribal governments during land use plan revisions. This new policy affords you opportunities to provide further input into this process. In addition to the government-to-government consultation that has been ongoing throughout the process, we would also like to invite you to become a cooperating agency. Cooperating agency status is available to government entities with jurisdiction by law or special expertise. A cooperating agency provides staff to the BLM planning team to develop analysis for which they have particular expertise. The cooperating agency must develop a Memorandum of Understanding with the federal agency and must fund its own participation. Please note that the tribe's participation as a cooperating agency does not satisfy the BLM's obligation to consult on a government-to-government basis. Therefore, regardless of your tribe's decision to participate or not as a cooperating agency, our government-to-government consultation will continue.

Some of the other government entities who are cooperating agencies on the Casper RMP include the State of Wyoming, the local County Governments, and the local Conservation Districts. Although alternatives have been developed, you still have the opportunity to help us refine the management actions as we work through completion of the Draft Environmental Impact Statement (EIS), Final EIS, and Record of Decision. This opportunity is available to you both through the cooperating agency process and through the existing government-to-government consultation process.

We value your knowledge, concerns, and perspectives relating to the planning area. If you would like further information regarding cooperating agency status, please contact Linda Slone, Project Manager, at 307-261-7520. With regard to cultural heritage issues, you may wish to contact Christopher Arthur, Archaeologist, at 307-261-7501. Thanks for your continued participation in the Casper RMP revision process.

Sincerely,

JAMES R. MURRAY

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Crow_TC

LSlone 10-23-03
10/23/03
1610/Casper RMP

7002 2410 0000 4928 0375
7002 2410 0000 4928 1181
7002 2410 0000 4928 1174

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

OCT 23 2003

Mr. Vernon Hill, Chairman
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY 82514

Dear Mr. Hill:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

We are contacting tribes who have oral traditions or have previously expressed cultural concerns relating to the planning area, or who are documented to have occupied or used the area during historic times. We request your comments on any issues or concerns regarding the management of this planning area. We would appreciate any historical information on the use and significance of the planning area, such as places of traditional, religious, or cultural importance that your tribe wishes the BLM to consider in determining tribal needs for use, access, or other special management. Any information you provide will be used in a respectful manner, and anything you would like to share with BLM but would prefer not be made public will be kept confidential.

The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

If possible, we request that you identify traditional leaders or elders who you determine should be contacted in addition to yourself, to express their interests or concerns regarding the Casper RMP. We look forward to working with you and your tribal members or authorized representatives who have considerable knowledge of tribal history and concerns.

While your input and involvement are welcomed throughout the planning process, there are certain points in the process where your participation is very important. Initially, we are requesting data, input, and identification of issues during the formal scoping period. Your input will also be important during the early stage of developing the alternatives for the draft Environmental Impact Statement (EIS). Later, during the 90-day public review and comment period for the draft EIS, your input will help us prepare the final EIS and the Record of Decision for the Casper RMP.

We will devote careful consideration to all of your comments as we make decisions about the future management of the BLM-administered public lands and resources. We will keep you informed of the status of the planning effort throughout the process. We look forward to working cooperatively to address your tribe's concerns in a thoughtful and respectful manner.

The enclosed Return Form is provided for your convenience in responding to this letter, should you wish to reply in that manner.

If you would like further information or want to request a meeting, please contact Linda Slone, Project Manager, at (307) 261-7520 or email Linda_Slone@blm.gov. With regard to cultural heritage issues, please contact Christopher Arthur, the cultural resource specialist on the planning team, at (307) 261-7501 or email Chris_Arthur@blm.gov. We will contact you soon by telephone to discuss your tribe's concerns and issues. Thank you for your time and consideration, and we look forward to hearing from you.

Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Mr. Richard Burnett
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY 82514 – 1181

Arlen Shoyo
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY – 0375

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1196
Return Receipt Requested

Mr. Vernon Hill, Chairman
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY 82514

Dear Mr. Hill:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

We would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

We would be happy to meet you or your representatives here in the area or in your offices to discuss the project. We would also be pleased to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. If you have comments concerning this RMP, please advise us within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc: Mr. Richard Burnett
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY 82514

Arlen Shoyo
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY 82514

Ms. Reba Tehran
Shoshone Cultural Office
P.O. Box 1008
Fort Washakie, WY 82514

WSO 930 (Nowak)

WSO 930 (Capron)

1610 Casper RMP

Lilene
1-28-05
C. Authen
1/28/05
D. Wilde
1/28/05

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-5972
Return Receipt Requested

Mr. Ivan Posey, Chairman
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY 82514

Dear Mr. Posey:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

Cedar Ridge is the only known Traditional Cultural Property (TCP) in the planning area. Under the Preferred Alternative, the TCP would be 1) open to oil and gas leasing subject to no surface occupancy; this restriction would be applicable to all other types of surface development including but not limited to rights-of-way, and range improvements, 2) withdrawn from locatable mineral entry, 3) closed to disposal of mineral materials, and 4) livestock grazing would continue but use would be managed to meet TCP objectives. Additionally, a controlled surface use restriction would be applied to all surface development proposals in a viewshed surrounding the TCP as far south as the Arminto/Lost Cabin Road and Badwater Road to the north. Surface disturbing activities in this viewshed area would be minimized by using techniques such as directional drilling and well-twinning wherever practicable. Under all alternatives no surface development would be allowed on the Spanish Diggings prehistoric quarry. Under the Preferred Alternative, the minimum cultural resource block inventory size on Pine Ridge in Natrona and Converse counties, Wyoming would be 40 acres with linear inventories covering a minimum of 100 feet either side of surface disturbance.

A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

I would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

I would be happy to meet you or your representatives at this office or in your office to discuss the RMP alternatives. I can come to your office one day or evening during the week of February 21, 2005. I would also be pleased to conduct tours of the planning area to discuss important archeological sites or other areas of interest you identify. Should you have any questions please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

AMERICK LUSE

FOR James Murkin
Field Manager

Enclosure

cc: Arlen Shoyo
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY 82514

Ms. Reba Tehran
Shoshone Cultural Office
P.O. Box 1008
Fort Washakie, WY 82514

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter3 _STL. doc:01/21/2005mtb

1610/Casper RMP Revision

LSlone 11-16-05
cArthur 11/16/05

7005-0390-0001-6066-6140
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 18 2005

Mr. Ivan Posey, Chairman
Shoshone Business Council
P.O. Box 538
Fort Washakie, WY 82514

Dear Mr. Posey:

The Casper Field Office began revising its land use plan in 2002. The Casper Resource Management Plan (RMP) will serve as our general direction for all resource and land use management decisions for the BLM-administered public lands and resources in our administrative area. The plan will guide the use, protection, and management of natural and cultural resources on the public lands in most of Natrona County and all of Converse, Goshen and Platte counties in Wyoming. BLM's Lander Field Office administers public land in the southwestern corner of Natrona County.

In an effort to keep you informed of the status of our planning effort, we are again contacting tribes who have previously expressed cultural concerns relating to the planning area, or whose traditional lands coincide with the planning area. To date, consultation on the RMP revision process with your tribe has included correspondence, telephone contacts, and meetings when requested.

We greatly appreciate the coordination we have accomplished with you in the past and would like to continue our relationship. BLM recently modified its policy on working with tribal governments during land use plan revisions. This new policy affords you opportunities to provide further input into this process. In addition to the government-to-government consultation that has been ongoing throughout the process, we would also like to invite you to become a cooperating agency. Cooperating agency status is available to government entities with jurisdiction by law or special expertise. A cooperating agency provides staff to the BLM planning team to develop analysis for which they have particular expertise. The cooperating agency must develop a Memorandum of Understanding with the federal agency and must fund its own participation. Please note that the tribe's participation as a cooperating agency does not satisfy the BLM's obligation to consult on a government-to-government basis. Therefore, regardless of your tribe's decision to participate or not as a cooperating agency, our government-to-government consultation will continue.

Some of the other government entities who are cooperating agencies on the Casper RMP include the State of Wyoming, the local County Governments, and the local Conservation Districts. Although alternatives have been developed, you still have the opportunity to help us refine the management actions as we work through completion of the Draft Environmental Impact Statement (EIS), Final EIS, and Record of Decision. This opportunity is available to you both through the cooperating agency process and through the existing government-to-government consultation process.

We value your knowledge, concerns, and perspectives relating to the planning area. If you would like further information regarding cooperating agency status, please contact Linda Slone, Project Manager, at 307-261-7520. With regard to cultural heritage issues, you may wish to contact Christopher Arthur, Archaeologist, at 307-261-7501. Thanks for your continued participation in the Casper RMP revision process.

Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Shoshone_BC

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1134
Return Receipt Requested

Mr. Bill Evens Horse
Chairman
Kiowa Tribe of Oklahoma
Carnegie, OK 73015

Dear Mr. Evens Horse:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

We would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

We would be happy to meet you or your representatives here in the area or in your offices to discuss the project. We would also be pleased to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. If you have comments concerning this RMP, please advise us within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc:

Rev. George Daingkau
Kiowa Tribe of Oklahoma
Carnegie, OK 73015

WSO 930 (Nowak)

WSO 930 (Capron)

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1610 Casper RMP

JAN 3 1 2005

Certified Mail Number
Return Receipt Requested

Mr. Bill Evens Horse
Chairman
Kiowa Tribe of Oklahoma
Carnegie, OK 73015

Dear Mr. Evens Horse:

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Cedar Ridge is the only known Traditional Cultural Property (TCP) in the planning area. Under the Preferred Alternative, the TCP would be 1) open to oil and gas leasing subject to no surface occupancy; this restriction would be applicable to all other types of surface development including but not limited to rights-of-way, and range improvements, 2) withdrawn from locatable mineral entry, 3) closed to disposal of mineral materials, and 4) livestock grazing would continue but use would be managed to meet TCP objectives. Additionally, a controlled surface use restriction would be applied to all surface development proposals in a viewshed surrounding the TCP as far south as the Arminto/Lost Cabin Road and Badwater Road to the north. Surface disturbing activities in this viewshed area would be minimized by using techniques such as directional drilling and well-twinning wherever practicable. Under all alternatives no surface development would be allowed on the Spanish Diggings prehistoric quarry. Under the Preferred Alternative, the minimum cultural resource block inventory size on Pine Ridge in Natrona and Converse counties, Wyoming would be 40 acres with linear inventories covering a minimum of 100 feet either side of surface disturbance.

2

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Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc:
Rev. George Daingkau
Kiowa Tribe of Oklahoma
Carnegie, OK 73015

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter3 _KTO. doc:01/21/2005mtb

1610/Casper RMP Revision

7005-0390-0001-6016-6195
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

LSlone 11-16-05
CAuthur 11/16/05

Mr. Bill Evens Horse
Chairman
Kiowa Tribe of Oklahoma
Carnegie, OK 73015

NOV 18 2005

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JAMES K. MURKIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Kiowa_

1610 Casper RMP

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-5903
Return Receipt Requested

Lower Brule Sioux Tribe
Attn: Scott Jones
Director of Cultural Resources and Public Relations
187 Oyate Circle
Lower Brule, SD 57548

Dear Mr. Jones:

le wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

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Sincerely,

James Murkin
FOR Field Manager

Enclosure

cc: Ms. Clair Green
PO BOX 842
White Sulphur Springs, MT 59645

WSO 930 (Nowak)

WSO 930 (Capron)

arch/letter3 _LBST. doc:01/21/2005mtb

1610/Casper RMP Revision

LSlone 11-16-05
CAuthur 11/16/05

7005-0390-0001-6066-6157
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 1 8 2005

Lower Brule Sioux Tribe
Attn: Scott Jones
Director of Cultural Resources and Public Relations
187 Oyate Circle
Lower Brule, SD 57548

Dear Mr. Jones:

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We greatly appreciate the coordination we have accomplished with you in the past and would like to continue our relationship. BLM recently modified its policy on working with tribal governments during land use plan revisions. This new policy affords you opportunities to provide further input into this process. In addition to the government-to-government consultation that has been ongoing throughout the process, we would also like to invite you to become a cooperating agency. Cooperating agency status is available to government entities with jurisdiction by law or special expertise. A cooperating agency provides staff to the BLM planning team to develop analysis for which they have particular expertise. The cooperating agency must develop a Memorandum of Understanding with the federal agency and must fund its own participation. Please note that the tribe's participation as a cooperating agency does not satisfy the BLM's obligation to consult on a government-to-government basis. Therefore, regardless of your tribe's decision to participate or not as a cooperating agency, our government-to-government consultation will continue.

Some of the other government entities who are cooperating agencies on the Casper RMP include the State of Wyoming, the local County Governments, and the local Conservation Districts. Although alternatives have been developed, you still have the opportunity to help us refine the management actions as we work through completion of the Draft Environmental Impact Statement (EIS), Final EIS, and Record of Decision. This opportunity is available to you both through the cooperating agency process and through the existing government-to-government consultation process.

We value your knowledge, concerns, and perspectives relating to the planning area. If you would like further information regarding cooperating agency status, please contact Linda Slone, Project Manager, at 307-261-7520. With regard to cultural heritage issues, you may wish to contact Christopher Arthur, Archaeologist, at 307-261-7501. Thanks for your continued participation in the Casper RMP revision process.

Sincerely,

JAMES K. MURIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Lower_Brule_Sioux

LSlone 10-23-03
10/23/03

1610/Casper RMP

7002 2410 0000 4928 0481
7002 2410 0000 4948 0474

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

OCT 2 3 2003

Mr. Sam Penney, Chairman
Nez Perce Tribal Executive Committee
P.O. Box 305
Lapwai, ID 83540

Dear Mr. Penney:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

We are contacting tribes who have oral traditions or have previously expressed cultural concerns relating to the planning area, or who are documented to have occupied or used the area during historic times. We request your comments on any issues or concerns regarding the management of this planning area. We would appreciate any historical information on the use and significance of the planning area, such as places of traditional, religious, or cultural importance that your tribe wishes the BLM to consider in determining tribal needs for use, access, or other special management. Any information you provide will be used in a respectful manner, and anything you would like to share with BLM but would prefer not be made public will be kept confidential.

The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

If possible, we request that you identify traditional leaders or elders who you determine should be contacted in addition to yourself, to express their interests or concerns regarding the Casper RMP. We look forward to working with you and your tribal members or authorized representatives who have considerable knowledge of tribal history and concerns.

While your input and involvement are welcomed throughout the planning process, there are certain points in the process where your participation is very important. Initially, we are requesting data, input, and identification of issues during the formal scoping period. Your input will also be important during the early stage of developing the alternatives for the draft Environmental Impact Statement (EIS). Later, during the 90-day public review and comment period for the draft EIS, your input will help us prepare the final EIS and the Record of Decision for the Casper RMP.

We will devote careful consideration to all of your comments as we make decisions about the future management of the BLM-administered public lands and resources. We will keep you informed of the status of the planning effort throughout the process. We look forward to working cooperatively to address your tribe's concerns in a thoughtful and respectful manner.

The enclosed Return Form is provided for your convenience in responding to this letter, should you wish to reply in that manner.

If you would like further information or want to request a meeting, please contact Linda Slone, Project Manager, at (307) 261-7520 or email Linda_Slone@blm.gov. With regard to cultural heritage issues, please contact Christopher Arthur, the cultural resource specialist on the planning team, at (307) 261-7501 or email Chris_Arthur@blm.gov. We will contact you soon by telephone to discuss your tribe's concerns and issues. Thank you for your time and consideration, and we look forward to hearing from you.

Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Mr. Allen P. Shickpoo, Jr.
Natural Resources Subcommittee
Nez Perce Tribe
P.O. Box 305
Lapwai, ID

- 0481

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1158
Return Receipt Requested

ANTHONY JOHNSON

Mr. Sam Pinney, Chairman
Nez Perce Tribal Executive Committee
P.O. Box 305
Lapwai, ID 83540

Dear Mr. Pinney:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

We would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

We would be happy to meet you or your representatives here in the area or in your offices to discuss the project. We would also be pleased to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. If you have comments concerning this RMP, please advise us within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc: Mr. Allen P. Shickpoo, Jr.
Natural Resources Subcommittee
Nez Perce Tribe
PO Box 305
Lapwai, ID 58335

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2 _NPT. doc:07/30/04mtb

Lillom 1-28-05
C. Arthur 1/28/05
D. Whyde 1/28/05

1610 Casper RMP

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-5934
Return Receipt Requested

Mr. Anthony Johnson, Chairman
Nez Perce Tribal Executive Committee
P.O. Box 305
Lapwai, ID 83540

Dear Mr. Johnson:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

Cedar Ridge is the only known Traditional Cultural Property (TCP) in the planning area. Under the Preferred Alternative, the TCP would be 1) open to oil and gas leasing subject to no surface occupancy; this restriction would be applicable to all other types of surface development including but not limited to rights-of-way, and range improvements, 2) withdrawn from locatable mineral entry, 3) closed to disposal of mineral materials, and 4) livestock grazing would continue but use would be managed to meet TCP objectives. Additionally, a controlled surface use restriction would be applied to all surface development proposals in a viewshed surrounding the TCP as far south as the Arminto/Lost Cabin Road and Badwater Road to the north. Surface disturbing activities in this viewshed area would be minimized by using techniques such as directional drilling and well-twinning wherever practicable. Under all alternatives no surface development would be allowed on the Spanish Diggings prehistoric quarry. Under the Preferred Alternative, the minimum cultural resource block inventory size on Pine Ridge in Natrona and Converse counties, Wyoming would be 40 acres with linear inventories covering a minimum of 100 feet either side of surface disturbance.

A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

I would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

I would be happy to meet you or your representatives at this office or in your office to discuss the RMP alternatives. I would also be pleased to conduct tours of the planning area to discuss important archeological sites or other areas of interest you identify. Should you have any questions please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

FOR James Murkin
Field Manager

Enclosure

cc: Mr. Allen P. Shickpoo, Jr.
Natural Resources Subcommittee
Nez Perce Tribe
PO Box 305
Lapwai, ID 58335

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter3 _NPT. doc:01/21/2005mtb

1610/Casper RMP Revision

LSlone 11-16-05
CArthur 11/16/05

7005-0390-0001-6066-6089
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Anthony Johnson, Chairman
Nez Perce Tribal Executive Committee
P.O. Box 305
Lapwai, ID 83540

NOV 18 2005

Dear Mr. Johnson:

The Casper Field Office began revising its land use plan in 2002. The Casper Resource Management Plan (RMP) will serve as our general direction for all resource and land use management decisions for the BLM-administered public lands and resources in our administrative area. The plan will guide the use, protection, and management of natural and cultural resources on the public lands in most of Natrona County and all of Converse, Goshen and Platte counties in Wyoming. BLM's Lander Field Office administers public land in the southwestern corner of Natrona County.

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Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Nez_Perce

CSA 10/23/03
Slone 10-23-03
1610 Casper RMP

7002 2410 0000 4928 0399
7002 2410 0000 4928 0382

OCT 2 3 2003

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Burton Hutchinson, Sr.
Chairman
Arapaho Business Council
P.O. Box 396
Fort Washakie, WY 82514

Dear Mr. Hutchinson:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

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The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

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Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Mr. "Bobby" Goggles
P.O. Box 54 Star Route
Arapahoe, WY 82510

bcc: Linda Slone (CFO) – 0399

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1110
Return Receipt Requested

Mr. Burton Hutchinson, Sr., Chairman
Arapaho Business Council
P.O. Box 396
Fort Washakie, WY 82514

Dear Mr. Hutchinson:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

We would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

We would be happy to meet you or your representatives here in the area or in your offices to discuss the project. We would also be pleased to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. If you have comments concerning this RMP, please advise us within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc: Mr. Robert "Bobby" Goggles
328 17 Mile Road
Arapahoe, WY 82510

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2_NATL. doc:07/30/04mtb

1610 Casper RMP

Lillone 1-28-05 cat 1/2 Dkt 1/21

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-5910
Return Receipt Requested

Mr. Richard Brannon, Chairman
Arapaho Business Council
P.O. Box 396
Fort Washakie, WY 82514

Dear Mr. Brannon:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

Cedar Ridge is the only known Traditional Cultural Property (TCP) in the planning area. Under the Preferred Alternative, the TCP would be 1) open to oil and gas leasing subject to no surface occupancy; this restriction would be applicable to all other types of surface development including but not limited to rights-of-way, and range improvements, 2) withdrawn from locatable mineral entry, 3) closed to disposal of mineral materials, and 4) livestock grazing would continue but use would be managed to meet TCP objectives. Additionally, a controlled surface use restriction would be applied to all surface development proposals in a viewshed surrounding the TCP as far south as the Arminto/Lost Cabin Road and Badwater Road to the north. Surface disturbing activities in this viewshed area would be minimized by using techniques such as directional drilling and well-twinning wherever practicable. Under all alternatives no surface development would be allowed on the Spanish Diggings prehistoric quarry. Under the Preferred Alternative, the minimum cultural resource block inventory size on Pine Ridge in Natrona and Converse counties, Wyoming would be 40 acres with linear inventories covering a minimum of 100 feet either side of surface disturbance.

A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

I would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

I would be happy to meet you or your representatives at this office or in your office to discuss the RMP alternatives. I can come to your office one day or evening during the week of February 21, 2005. I would also be pleased to conduct tours of the planning area to discuss important archeological sites or other areas of interest you identify. Should you have any questions please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc: Mr. Robert "Bobby" Goggles
328 17 Mile Road
Arapahoe, WY 82510

WSO 930 (Nowak)

WSO 930 (Capron)

areh/Letter3_NATL. doc:01/21/2005mtb

1610/Casper RMP Revision

APR 2 6 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Joann White
Tribal Historic Preservation Officer
Northern Arapaho Tribe
P.O. Box 1056
Fort Washakie, WY 82514

Dear Ms. White:

On March 9, 2005, I met with you and the Elder Council to discuss the new Resource Management Plan (RMP) the Casper Field Office is preparing. BLM has prepared a new map to help you and the Elders show us the general locations of cultural and spiritual interest to the Tribe. Surface ownership as well as areas of high development potential for oil and gas are shown on the map. I have enclosed two copies – one for you to mark on and return to me, and another for you to keep.

I would be happy to meet you again after you have had a chance to examine the maps. I would also be happy to conduct tours of the planning area, including important archeological sites or other areas of interest to you. Should you have any questions, please either contact me at the above address or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosure

cc: Mr. Robert "Bobby" Goggles
328 17 Mile Road
Arapahoe, WY 82510

Mr. Richard Brannon, Chairman
Arapaho Business Council
P.O. Box 396
Fort Washakie, WY 82514

bcc: WSO 930 (Nowak)
WSO 930 (Capron)
LCollins:so:4/26/05:LETTER_NATL

1610/Casper RMP Revision

LSlone 11-16-05
CAuthur 11/16/05

7005-0390-0001-6066-6225
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 1 8 2005

Mr. Richard Brannon, Chairman
Arapaho Business Council
P.O. Box 396
Fort Washakie, WY 82514

Dear Mr. Brannon:

The Casper Field Office began revising its land use plan in 2002. The Casper Resource Management Plan (RMP) will serve as our general direction for all resource and land use management decisions for the BLM-administered public lands and resources in our administrative area. The plan will guide the use, protection, and management of natural and cultural resources on the public lands in most of Natrona County and all of Converse, Goshen and Platte counties in Wyoming. BLM's Lander Field Office administers public land in the southwestern corner of Natrona County.

In an effort to keep you informed of the status of our planning effort, we are again contacting tribes who have previously expressed cultural concerns relating to the planning area, or whose traditional lands coincide with the planning area. To date, consultation on the RMP revision process with your tribe has included correspondence, telephone contacts, and meetings when requested.

We greatly appreciate the coordination we have accomplished with you in the past and would like to continue our relationship. BLM recently modified its policy on working with tribal governments during land use plan revisions. This new policy affords you the opportunity to provide further input into this process. In addition to the government-to-government consultation that has been ongoing throughout the process, we would also like to invite you to become a cooperating agency. Cooperating agency status is available to government entities with jurisdiction by law or special expertise. A cooperating agency provides staff to the BLM planning team to develop analysis for which they have particular expertise. The cooperating agency must develop a Memorandum of Understanding with the federal agency and must fund its own participation. Please note that the tribe's participation as a cooperating agency does not satisfy the BLM's obligation to consult on a government-to-government basis. Therefore, regardless of your tribe's decision to participate or not as a cooperating agency, our government-to-government consultation will continue.

Some of the other government entities who are cooperating agencies on the Casper RMP include several federal agencies, the State of Wyoming, the local County Governments, and the local Conservation Districts. Although alternatives have been developed, you still have the opportunity to help us refine the management actions as we work through completion of the Draft Environmental Impact Statement (EIS), Final EIS, and Record of Decision. This opportunity is available to you both through the cooperating agency process and through the existing government-to-government consultation process.

We value your knowledge, concerns, and perspectives relating to the planning area. If you would like further information regarding cooperating agency status, please contact Linda Slone, Project Manager, at 307-261-7520. With regard to cultural heritage issues, you may wish to contact Christopher Arthur, Archaeologist, at 307-261-7501. Thanks for your continued participation in the Casper RMP revision process.

Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:CAS_Invitations

CSA Thom 10/21/03
Slone 10-23-03
1610/Casper RMP

7002 2410 0000 4928 0566
7002 2410 0000 4928 0412
7002 2410 0000 4928 0405

OCT 2 3 2003

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Ms. Geri Small
President
Northern Cheyenne Tribal Council
P.O. Box 128
Lame Deer, MT 59043

Dear Ms. Small:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

We are contacting tribes who have oral traditions or have previously expressed cultural concerns relating to the planning area, or who are documented to have occupied or used the area during historic times. We request your comments on any issues or concerns regarding the management of this planning area. We would appreciate any historical information on the use and significance of the planning area, such as places of traditional, religious, or cultural importance that your tribe wishes the BLM to consider in determining tribal needs for use, access, or other special management. Any information you provide will be used in a respectful manner, and anything you would like to share with BLM but would prefer not be made public will be kept confidential.

The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

If possible, we request that you identify traditional leaders or elders who you determine should be contacted in addition to yourself, to express their interests or concerns regarding the Casper RMP. We look forward to working with you and your tribal members or authorized representatives who have considerable knowledge of tribal history and concerns.

While your input and involvement are welcomed throughout the planning process, there are certain points in the process where your participation is very important. Initially, we are requesting data, input, and identification of issues during the formal scoping period. Your input will also be important during the early stage of developing the alternatives for the draft Environmental Impact Statement (EIS). Later, during the 90-day public review and comment period for the draft EIS, your input will help us prepare the final EIS and the Record of Decision for the Casper RMP.

We will devote careful consideration to all of your comments as we make decisions about the future management of the BLM-administered public lands and resources. We will keep you informed of the status of the planning effort throughout the process. We look forward to working cooperatively to address your tribe's concerns in a thoughtful and respectful manner.

The enclosed Return Form is provided for your convenience in responding to this letter, should you wish to reply in that manner.

If you would like further information or want to request a meeting, please contact Linda Slone, Project Manager, at (307) 261-7520 or email Linda_Slone@blm.gov. With regard to cultural heritage issues, please contact Christopher Arthur, the cultural resource specialist on the planning team, at (307) 261-7501 or email Chris_Arthur@blm.gov. We will contact you soon by telephone to discuss your tribe's concerns and issues. Thank you for your time and consideration, and we look forward to hearing from you.

Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Gilbert Brady, Chairman
Northern Cheyenne Cultural Committee
P.O. Box 128
Lame Deer, MT 59043 – 0566

Mr. Steven Brady
Traditional Spokesperson
P.O. Box 128
Lame Deer, MT 59043 – 0412

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2976-1141
Return Receipt Requested

Ms. Geri Small, President
Northern Cheyenne Tribal Council
P.O. Box 128
Lame Deer, MT 59043

Dear Ms. Small:

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A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

We would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

We would be happy to meet you or your representatives here in the area or in your offices to discuss the project. We would also be pleased to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. If you have comments concerning this RMP, please advise us within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc:

Gilbert Brady, Sr.
Tribal Historic Preservation Officer
P.O. Box 128
Lame Deer, MT 59043

Mr. Steven Brady
Traditional Spokesperson
P.O. Box 542
Lame Deer, MT 59043

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2_NCTL. doc:07/30/04mtb

1610 Casper RMP

L Sloan 1-28-05
C. Duthie 1/28/05
D. Wylde 1/28/05

JAN 3 1 2005

Certified Mail Number 7004-0750-0003 3080-5927
Return Receipt Requested

Mr. Eugene Littlecoyote, President
Northern Cheyenne Tribal Council
P.O. Box 128
Lame Deer, MT 59043

Dear Mr. Littlecoyote:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

Cedar Ridge is the only known Traditional Cultural Property (TCP) in the planning area. Under the Preferred Alternative, the TCP would be 1) open to oil and gas leasing subject to no surface occupancy; this restriction would be applicable to all other types of surface development including but not limited to rights-of-way, and range improvements, 2) withdrawn from locatable mineral entry, 3) closed to disposal of mineral materials, and 4) livestock grazing would continue but use would be managed to meet TCP objectives. Additionally, a controlled surface use restriction would be applied to all surface development proposals in a viewshed surrounding the TCP as far south as the Arminto/Lost Cabin Road and Badwater Road to the north. Surface disturbing activities in this viewshed area would be minimized by using techniques such as directional drilling and well-twinning wherever practicable. Under all alternatives no surface development would be allowed on the Spanish Diggings prehistoric quarry. Under the Preferred Alternative, the minimum cultural resource block inventory size on Pine Ridge in Natrona and Converse counties, Wyoming would be 40 acres with linear inventories covering a minimum of 100 feet either side of surface disturbance.

A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

I would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

I would be happy to meet you or your representatives at this office or in your office to discuss the RMP alternatives. I can come to your office one day or evening during the week of February 21, 2005. I would also be pleased to conduct tours of the planning area to discuss important archeological sites or other areas of interest you identify. Should you have any questions please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc:
Gilbert Brady, Sr.
Tribal Historic Preservation Officer
P.O. Box 128
Lame Deer, MT 59043

Mr. Steven Brady
Traditional Spokesperson
P.O. Box 542
Lame Deer, MT 59043

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter3_NCTL. doc:01/21/2005mtb

1610/Casper RMP Revision

APR 2 6 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Conrad Fisher
Tribal Historic Preservation Officer
P.O. Box128
Lame Deer, MT 59043

Dear Mr. Fisher:

On March 1, 2005, I met with you and discussed the new Resource Management Plan (RMP) the Casper Field Office is preparing. BLM has prepared a new map to help you and the Elders show us the general locations of cultural and spiritual interest to the Tribe. Surface ownership as well as areas of high development potential for oil and gas are shown on the map. I have enclosed two copies – one for you to mark on and return to me, and another copy for you to keep.

I would be happy to meet you again after you have had a chance to examine the maps. I would also be happy to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. Should you have any questions, please either contact me at the above address or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosure

cc: Mr. Eugene Littlecoyote, President
Northern Cheyenne Tribal Council
P.O. Box 128
Lame Deer, MT 59043

Mr. Steven Brady
Traditional Spokesperson
P.O. Box 542
Lame Deer, MT 59043

bcc: WSO 930 (Nowak)
WSO 930 (Capron)
LCollins:so:4/26/05:LETTER4_NCTL

1610/Casper RMP Revision

LSlone
11-16-05
CArthur 11/16/05

7005-0350-0001-6066-6096
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 1 8 2005

Mr. Eugene Littlecoyote, President
Northern Cheyenne Tribal Council
P.O. Box 128
Lame Deer, MT 59043

Dear Mr. Littlecoyote:

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Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Northern_Cheyenne

L Slone 10.23.03
CSC 10/23/03
1610/Casper RMP

OCT 2 3 2003

7002 2410 4928 0429
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. John Yellow Bird Steele
President
Oglala Sioux Tribal Council
P.O. Box H
Pine Ridge, SD 57770

Dear Mr. Steele:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

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Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1165
Return Receipt Requested

Mr. John Yellow Bird Steele,
President
Oglala Sioux Tribal Council
P.O. Box 2070
Pine Ridge, SD 57770-2070

Dear Mr. Yellow Bird Steele:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

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Sincerely,

James Murkin
Field Manager

cc:
WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2_OSN. doc:07/30/04mtb

1610 Casper RMP

L Slone 1-28-05
C. Arthur 1/28/05
D. Lukyle 1/28/05

JAN 3 1 2005

Certified Mail Number 7004-0750-0003 3080-5941
Return Receipt Requested

Mr. John Yellow Bird Steele,
President
Olglala Sioux Tribal Council
P.O. Box 2070
Pine Ridge, SD 57770-2070

Dear Mr. Yellow Bird Steele:

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Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc:
WSO 930 (Nowak)
WSO 930 (Capron)

arch/Letter3 _OSN. doc:01/21/2005mtb

1610/Casper RMP Revision

LSlone 11-16-05
CArthur 11/16/05

7005-0390-0001-6066-6201
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 18 2005

Mr. John Yellow Bird Steele
President
Oglala Sioux Tribal Council
P.O. Box 2070
Pine Ridge, SD 57770-2070

Dear Mr. Yellow Bird Steele:

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Sincerely,

JAMES K. MURRAY

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Oglala_Sioux

B

1610 Casper RMP

JAN 3 1 2005

Certified Mail Number
Return Receipt Requested

Mr. Charles Colombe, President
Rosebud Sioux Tribal Council
P.O. Box 430
Rosebud, SD 57570

Dear Mr. Colombe:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

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A key part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites. I am sharing this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locating either areas of general or specific concern within the planning area. If necessary I will maintain the confidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ridge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

I would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

I would be happy to meet you or your representatives at this office or in your office to discuss the RMP alternatives. I would also be pleased to conduct tours of the planning area to discuss important archeological sites or other areas of interest you identify. Should you have any questions please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to working with you in the future.

Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc: Mr. Terry Gray
Cultural Resource Coordinator
Rosebud Sioux Tribe
Sinte Gleska College
PO Box 675
Mission, SD 57555

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter3 _RSN. doc:01/21/2005mtb

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1172
Return Receipt Requested

Mr. Charles Colome, President
Rosebud Sioux Tribal Council
P.O. Box 430
Rosebud, SD 57570

Dear Mr. Colome:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

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Sincerely,

James Murkin
Field Manager

cc: Mr. Terry Gray
Cultural Resource Coordinator
Rosebud Sioux Tribe
Sinte Gleska College
PO Box 675
Mission, SD 57555

WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2 _RSN. doc:07/30/04mtb

Slone 10.22.03
Jim Murkin 10/22/03
1610/Casper RMP

7002 2410 0000 4928 0443
7002 2410 0000 4928 0436
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

OCT 23 2003

Mr. William Kindle, President
Rosebud Sioux Tribal Council
P.O. Box 430
Rosebud, SD 57570

Dear Mr. Kindle:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

We are contacting tribes who have oral traditions or have previously expressed cultural concerns relating to the planning area, or who are documented to have occupied or used the area during historic times. We request your comments on any issues or concerns regarding the management of this planning area. We would appreciate any historical information on the use and significance of the planning area, such as places of traditional, religious, or cultural importance that your tribe wishes the BLM to consider in determining tribal needs for use, access, or other special management. Any information you provide will be used in a respectful manner, and anything you would like to share with BLM but would prefer not be made public will be kept confidential.

The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

If possible, we request that you identify traditional leaders or elders who you determine should be contacted in addition to yourself, to express their interests or concerns regarding the Casper RMP. We look forward to working with you and your tribal members or authorized representatives who have considerable knowledge of tribal history and concerns.

While your input and involvement are welcomed throughout the planning process, there are certain points in the process where your participation is very important. Initially, we are requesting data, input, and identification of issues during the formal scoping period. Your input will also be important during the early stage of developing the alternatives for the draft Environmental Impact Statement (EIS). Later, during the 90-day public review and comment period for the draft EIS, your input will help us prepare the final EIS and the Record of Decision for the Casper RMP.

We will devote careful consideration to all of your comments as we make decisions about the future management of the BLM-administered public lands and resources. We will keep you informed of the status of the planning effort throughout the process. We look forward to working cooperatively to address your tribe's concerns in a thoughtful and respectful manner.

The enclosed Return Form is provided for your convenience in responding to this letter, should you wish to reply in that manner.

If you would like further information or want to request a meeting, please contact Linda Slone, Project Manager, at (307) 261-7520 or email Linda_Slone@blm.gov. With regard to cultural heritage issues, please contact Christopher Arthur, the cultural resource specialist on the planning team, at (307) 261-7501 or email Chris_Arthur@blm.gov. We will contact you soon by telephone to discuss your tribe's concerns and issues. Thank you for your time and consideration, and we look forward to hearing from you.

Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Mr. Terry Gray
Cultural Resource Coordinator
Rosebud Sioux Tribe
Sinte Gleska College
P.O. Box 675
Mission, SD 57555

- 0443

bcc: Linda Slone (CFO)

LStone:so:10/22/03:NAconsultation-rmp1

1610/Casper RMP Revision

LSlone 11-16-05
Chrthur 11/16/05

7005-0390-0001-6066-6102
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 18 2005

Mr. Charles Colombe, President
Rosebud Sioux Tribal Council
P.O. Box 430
Rosebud, SD 57570

Dear Mr. Colombe:

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JAMES K. MURKIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

Slone 10-23-03
10/23/03
1610/Casper RMP

7002 2410 0000 4928 0498
7002 2410 0000 4928 0214

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

OCT 2 3 2003

Mr. Fredrick Auck, Chairman
Shoshone-Bannock Tribes of Fort Hall
Business Council
P.O. Box 306
Fort Hall, ID 83203-0306

Dear Mr. Auck:

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Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

cc: Mr. Willie Preacher
Cultural Resource Coordinator
Shoshone-Bannock Tribes
P.O. Box 306
Fort Hall, ID 83203-0306 – 0498

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1185
Return Receipt Requested

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Shoshone-Bannock Tribes of Fort Hall
Business Council
P.O. Box 306
Fort Hall, ID 83203-0306

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Sincerely,

James Murkin
Field Manager

cc:
WSO 930 (Nowak)

WSO 930 (Capron)

arch/letter2 _SBTL. doc:07/30/04mtb

1610 Casper RMP

JAN 3 1 2005

Certified Mail Number 7004-0750-0003 3080-5965
Return Receipt Requested

Ms. Nancy E. Murillo, Chairman
Shoshone-Bannock Tribes of Fort Hall
Business Council
P.O. Box 306
Fort Hall, ID 83203-0306

Dear Ms. Murillo:

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/S/ERIC R LUSE

FOR James Murkin
Field Manager

Enclosure

cc: Mr. Willie Preacher
Cultural Resource Coordinator
Shoshone-Bannock Tribes
PO Box 306
Fort Hall, ID 83203-0190

WSO 930 (Nowak)

WSO 930 (Capron)

arch/letter3 _SBTL. doc:01/21/2005mtb

1610/Casper RMP Revision

Lslone
11-16-05
Cathy 11/16/05

7005-0390-0001-6066-6126
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

NOV 1 8 2005

Ms. Nancy E. Murillo, Chairman
Shoshone-Bannock Tribes of Fort Hall
Business Council
P.O. Box 306
Fort Hall, ID 83203-0306

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Sincerely,

JAMES K. MURRAY

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Shoshone_Bannock

1610/Casper RMP

7002 2410 0000 4928 0559

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

OCT 2 3 2003

Ute Tribe
Tribal Chairman
P.O. Box 190
Fort Duchesne, UT 84026-0190

Dear Sirs:

The Casper Field Office of the Bureau of Land Management (BLM) is beginning a revision of its land use plan, the Casper Resource Management Plan (RMP). The management plan serves as BLM's general direction for all resource and land use decisions for the BLM-administered public lands and resources in the Casper Field Office planning area. This will include guiding the use, protection, and management of natural and cultural resources on the public lands in much of Natrona, Converse, Platte and Goshen counties in Wyoming (see enclosed map). Developing the RMP will require the preparation of an Environmental Impact Statement (EIS). The BLM will work cooperatively with state, local, and tribal governments in developing the RMP and the EIS. We would like to begin consultations with you, and invite you to participate in the planning process, in accordance with the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, the American Indian Religious Freedom Act, and Executive Order 13007 on Indian Sacred Sites.

The Casper Field Office planning area contains a large number of archeological sites representing occupation of the area for at least the last 10,000 years. We have numerous sites with stone alignments and cairns, as well as many camp sites and tool manufacturing areas. The only formally recognized sacred site that we know of is Cedar Ridge, on Badwater Creek near Waltman, Wyoming. No other sacred sites, ceremonial sites or other traditional use areas have been identified at present. The planning area contains other significant cultural resources that have yet to be discovered.

We are contacting tribes who have oral traditions or have previously expressed cultural concerns relating to the planning area, or who are documented to have occupied or used the area during historic times. We request your comments on any issues or concerns regarding the management of this planning area. We would appreciate any historical information on the use and significance of the planning area, such as places of traditional, religious, or cultural importance that your tribe wishes the BLM to consider in determining tribal needs for use, access, or other special management. Any information you provide will be used in a respectful manner, and anything you would like to share with BLM but would prefer not be made public will be kept confidential.

The Cedar Ridge site represents our major success in the consultation effort. An open exchange among tribal council representatives, representatives of the elders, BLM officials and cultural resource staff has resulted in recognizing this highly important site as a Traditional Cultural Property with great significance for the Eastern Shoshone. The result is additional protection for an area traditionally used for ceremonial purposes, and a well-defined zone in which future land uses will be approved only after very careful consideration of the effects to Cedar Ridge. Without consultation, we would have had an enormous archaeological site, valuable for scientific purposes, but might have lost the equally, if not more, important values as a ceremonial site. Normal cultural resource procedures would have captured the scientific information, but irreparable harm would have come to the intangible traditional values.

The Casper Field Office requests a consultation with your tribe at a time and location convenient for you. We would like to discuss the Casper RMP revision and why your involvement is vital to the success of this revision. We would also like to receive any information or concerns you may have about the RMP revision. We would be pleased to offer tours of the planning area, including significant archeological sites or other areas of interest.

In addition, we will be conducting a formal public involvement process during the next six months, including public scoping meetings the week of November 10, 2003. We would be very pleased if you participate in this process. You should have already received an invitation to participate in this process. Your invitation included specific meeting dates and locations.

If possible, we request that you identify traditional leaders or elders who you determine should be contacted in addition to yourself, to express their interests or concerns regarding the Casper RMP. We look forward to working with you and your tribal members or authorized representatives who have considerable knowledge of tribal history and concerns.

While your input and involvement are welcomed throughout the planning process, there are certain points in the process where your participation is very important. Initially, we are requesting data, input, and identification of issues during the formal scoping period. Your input will also be important during the early stage of developing the alternatives for the draft Environmental Impact Statement (EIS). Later, during the 90-day public review and comment period for the draft EIS, your input will help us prepare the final EIS and the Record of Decision for the Casper RMP.

We will devote careful consideration to all of your comments as we make decisions about the future management of the BLM-administered public lands and resources. We will keep you informed of the status of the planning effort throughout the process. We look forward to working cooperatively to address your tribe's concerns in a thoughtful and respectful manner.

The enclosed Return Form is provided for your convenience in responding to this letter, should you wish to reply in that manner.

If you would like further information or want to request a meeting, please contact Linda Slone, Project Manager, at (307) 261-7520 or email Linda_Slone@blm.gov. With regard to cultural heritage issues, please contact Christopher Arthur, the cultural resource specialist on the planning team, at (307) 261-7501 or email Chris_Arthur@blm.gov. We will contact you soon by telephone to discuss your tribe's concerns and issues. Thank you for your time and consideration, and we look forward to hearing from you.

Sincerely,

Jim Murkin
Field Manager, Casper

Enclosures:
Map of Planning Area
Return Form

bcc: Linda Slone (CFO)

LSlone:so:10/22/03:NAconsultation-rmp1

1610 Casper RMP

AUG 0 6 2004

Certified Mail Number 7004-0550-0001-2476-1202
Return Receipt Requested

Mr. Chairman
Ute Tribe
PO Box 190
Fort Duchesne, UT 84026-0190

Dear Mr. Chairman:

We wrote several months ago to advise you that the Casper Field Office is preparing a new Resource Management Plan (RMP). This plan will define how various resources are managed within our area for the next several decades. One part of this plan deals with cultural resources and how the BLM cultural resources staff will work with Tribal Representatives and development interests to protect important sites.

A critical step in this process is the identification of what we call traditional cultural properties, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. These are areas where you have traditional interests such as ceremonial sites, places of special spiritual value, areas where important plants have been gathered or other areas of importance to your Tribe. We can find and document camps and workshop areas through the normal process of inventory and recording that occurs as we permit various actions. However, we need to work with you to identify areas of special concern for your Tribe. We also need to know the appropriate Tribal cultural resources people or representatives of the Elders to contact to work out ways to provide adequate protection for these places.

We would also appreciate knowing any concerns you may have with this RMP or about sites significant to the history, culture, or religion of American Indians within the Casper Field Office area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

We would be happy to meet you or your representatives here in the area or in your offices to discuss the project. We would also be pleased to conduct tours of the planning area, including important archeological sites or other areas of interest you identify. If you have comments concerning this RMP, please advise us within 30 days of receipt of this letter. We have attached a form that may be of use to you in responding to this request for information. Should you have any questions, please contact Michael T. Bies, our Archaeologist at the above address, by email at mike_bies@blm.gov or by telephone at (307) 347-5154. We look forward to working with you in the future.

Sincerely,

James Murkin
Field Manager

cc:
WSO 930 (Nowak)

WSO 930 (Capron)

arch/Letter2 _UTE. doc:07/30/04mtb

1610 Casper RMP

L Stone 1-28-05
C. Quist 1/28/05
Dwhyde 11/28/05

JAN 3 1 2005

Certified Mail Number 7004-0750-0003-3080-6985
Return Receipt Requested

Mr. Chairman
Ute Tribe
PO Box 190
Fort Duchesne, UT 84026-0190

Dear Mr. Chairman:

I wrote several months ago to advise your Tribe that the Casper Field Office is preparing a new resource management plan (RMP). We have now completed the alternatives to be considered in the RMP and selected a Preferred Alternative. Alternative A continues our existing management without change, Alternative B emphasizes protection of resources, Alternative C emphasizes a balanced approach of both protection and development of resources, Alternative D emphasizes development of resources, and Alternative E is the Preferred Alternative and consists of a combination of the other four alternatives we hope will meet the needs of our area.

Cedar Ridge is the only known Traditional Cultural Property (TCP) in the planning area. Under the Preferred Alternative, the TCP would be 1) open to oil and gas leasing subject to no surface occupancy; this restriction would be applicable to all other types of surface development including but not limited to rights-of-way, and range improvements, 2) withdrawn from locatable mineral entry, 3) closed to disposal of mineral materials, and 4) livestock grazing would continue but use would be managed to meet TCP objectives. Additionally, a controlled surface use restriction would be applied to all surface development proposals in a viewshed surrounding the TCP as far south as the Arminto/Lost Cabin Road and Badwater Road to the north. Surface disturbing activities in this viewshed area would be minimized by using techniques such as directional drilling and well-twinning wherever practicable. Under all alternatives no surface development would be allowed on the Spanish Diggings prehistoric quarry. Under the Preferred Alternative, the minimum cultural resource block inventory size on Pine Ridge in Natrona and Converse Counties, Wyoming would be 40 acres with linear inventories covering a minimum of 100 feet either side of surface disturbance.

A key part of this plan deals with cultural resources and how the BLM cultural resource s staff will work with Tribal Representatives and development interests to protect important sites. I am s haring this pre-decisional deliberative information with you to help facilitate the identification of areas that have special interest to Tribes, like Cedar Ridge on Badwater Creek near Waltman, Wyoming. This information is not for release to the public at this time. I would greatly appreciate your assistance in locati ng either areas of general or specific concern within the planning area. If necessary I will maintain the co nfidentiality of these locations as allowed by federal law. A map is enclosed which shows the Cedar Ri dge, Pine Ridge, and Spanish Diggings areas that have previously been identified as of special interest to Tribes. I need to know if there are any other areas I may not have considered.

I would also appreciate knowing any concerns you may have with this RMP or about sit es significant to the history, culture, or religion of American Indians within the Casper Field Office area pur suant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470), the American Indian Religious Freedom Act, or any sacred sites pursuant to Executive Ord er 13007 signed May 24, 1996.

I would be happy to meet you or your representatives at this office or in your office to d iscuss the RMP alternatives. I would also be pleased to conduct tours of the planning area to discuss im portant archeological sites or other areas of interest you identify. Should you have any questio ns please contact me at the above address, or Michael T. Bies, our Archaeologist by email at mike_bies@blm.gov or by telephone at (307) 347-5154. I look forward to workin g with you in the future.

Sincerely,

/S/ERIC K LUSE

FOR James Murkin
Field Manager

Enclosure

cc:
WSO 930 (Nowak)
WSO 930 (Capron)

arch/Letter3 _UTE. doc:01/21/2005mtb

1610/Casper RMP Revision

NOV 1 8 2005

7005-0390-0001-6022-6133
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Chairman
Ute Tribe
PO Box 190
Fort Duchesne, UT 84026-0190

Dear Mr. Chairman:

The Casper Field Office began revising its land use plan in 2002. The Casper Resource Management Plan (RMP) will serve as our general direction for all resource and land use management decisions for the BLM-administered public lands and resources in our administrative area. The plan will guide the use, protection, and management of natural and cultural resources on the public lands in most of Natrona County and all of Converse, Goshen and Platte counties in Wyoming. BLM's Lander Field Office administers public land in the southwestern corner of Natrona County.

In an effort to keep you informed of the status of our planning effort, we are again contacting tribes who have previously expressed cultural concerns relating to the planning area, or whose traditional lands coincide with the planning area. To date, consultation on the RMP revision process with your tribe has included correspondence, telephone contacts, and meetings when requested.

We greatly appreciate the coordination we have accomplished with you in the past and would like to continue our relationship. BLM recently modified its policy on working with tribal governments during land use plan revisions. This new policy affords you opportunities to provide further input into this process. In addition to the government-to-government consultation that has been ongoing throughout the process, we would also like to invite you to become a cooperating agency. Cooperating agency status is available to government entities with jurisdiction by law or special expertise. A cooperating agency provides staff to the BLM planning team to develop analysis for which they have particular expertise. The cooperating agency must develop a Memorandum of Understanding with the federal agency and must fund its own participation. Please note that the tribe's participation as a cooperating agency does not satisfy the BLM's obligation to consult on a government-to-government basis. Therefore, regardless of your tribe's decision to participate or not as a cooperating agency, our government-to-government consultation will continue.

Some of the other government entities who are cooperating agencies on the Casper RMP include the State of Wyoming, the local County Governments, and the local Conservation Districts. Although alternatives have been developed, you still have the opportunity to help us refine the management actions as we work through completion of the Draft Environmental Impact Statement (EIS), Final EIS, and Record of Decision. This opportunity is available to you both through the cooperating agency process and through the existing government-to-government consultation process.

We value your knowledge, concerns, and perspectives relating to the planning area. If you would like further information regarding cooperating agency status, please contact Linda Slone, Project Manager, at 307-261-7520. With regard to cultural heritage issues, you may wish to contact Christopher Arthur, Archaeologist, at 307-261-7501. Thanks for your continued participation in the Casper RMP revision process.

Sincerely,

JAMES K. MURKIN

Field Manager, Casper

Enclosures
Return Form
Self-addressed Stamped Envelope

LSlone:so:11/14/05:Ute_Tribe

CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX D

Oil and Gas Operations

Appendix D
Oil and Gas Operations

GEOPHYSICAL EXPLORATION

Oil and gas can be discovered by either direct or indirect exploration methods, such as geologic surface mapping, seeps, well data, and remote sensing data. In many cases, indirect-methods, such as seismic, gravity, and magnetic surveys, are required to delineate subsurface features that may contain oil and gas. Geophysical exploration provides information that increases the chances of drilling a discovery well, as well as information that may discourage drilling and the associated surface disturbance. More sophisticated geophysical techniques, such as a three-dimensional (3-D) seismic survey, is an intensive data acquisition and computer synthesis system used to analyze and three dimensionally depict subsurface geologic structures/stratigraphy. This technique is capable of locating and displaying unknown subsurface pools or pockets, which potentially could contain producible hydrocarbons. Data obtained through this 3-D geophysical data acquisition project should enable wells to be drilled with a much greater probability of locating producible hydrocarbons than is attainable via previous methods, such as two-dimensional (2-D) seismic data and wildcat wells. Thus, this should result in fewer "dry holes" in the future, minimizing the need for drilling and associated environmental disturbance.

Gravity Surveys

Gravitational prospecting detects micro-variations in gravitational attraction caused by the differences in the density of various types of rock. Gravity data are used to generate anomaly maps from which faults and general structural trends can be interpreted. These surveys generally are not considered definitive because of the many corrections required (e.g., terrain, elevation, latitude, etc.) and the poor resolution of complex subsurface structures. The instrument used for gravity surveys is a small portable device called a gravimeter. Generally, measurements are taken at many points along a linear transect. The gravimeter is transported either by backpack, helicopter, or off-road vehicle. The only surface disturbance associated with gravity prospecting is that which is caused by a vehicle, if used.

Magnetic Surveys

Magnetic prospecting most commonly is used for locating metallic ore bodies. It is used to a limited extent in oil and gas exploration. Magnetic surveys use an instrument called a magnetometer to detect small magnetic anomalies caused by mineral and lithologic variations in the Earth's crust. These surveys can detect trends in basement rock and the approximate depth to basement rocks, but, in general, they provide little specific data to aid in petroleum exploration. Many corrections are required to obtain reliable information. The generated maps lack high resolution and provide rudimentary views of subsurface geology. Magnetometers vary greatly in size and complexity, and, in general, most magnetic surveys are conducted from the air by suspending a magnetometer under an airplane. Magnetic surveys conducted on the ground nearly are identical to gravity surveys; surface disturbance is minimal to nonexistent.

Seismic Reflection Surveys

Seismic prospecting is the best and most popular indirect method used for locating subsurface structures and stratigraphy that may contain hydrocarbons. Seismic energy (shock waves) is induced into the earth using one of several methods, typically shot holes or vibrators. As these waves travel downward and outward, they encounter various rock strata, each having a different seismic velocity characteristic. As the wave energy encounters the interface between rock layers where the lower layer is of lower seismic velocity, some of the seismic energy is reflected upward. Sensing devices, commonly called geophones,

are placed on the surface to detect these reflections. The geophones are connected to a recording truck that stores the data. The time required for the shock waves to travel from the shot point down to a given reflector and back to the geophone is related to depth. This value is mapped to give an underground picture of the geologic structure.

Many methods exist today that an explorationist can use to induce the initial seismic energy into the earth. All methods require preliminary surveying and lying of geophones. The thumper and vibrator methods pound or vibrate the earth to create a shock wave. Usually, large trucks are used, each equipped with vibrator pads (about 4-foot square). The pads are lowered to the ground, and vibrators on all trucks are triggered electronically from the recording truck. Information is recorded, and then the trucks move forwards a short distance and the process is repeated. Less than 50 square feet of surface area is required to operate the equipment at each test site. The trucks are equipped with large flotation-type tires, which reduce the impact of driving over undisturbed terrain.

The drilling method uses truck-mounted and buggy-mounted drills that drill small-diameter holes to depths of 60 to 200 feet. Four to 16 holes are drilled per mile of line. Usually, a 30-pound charge of explosives is placed in the hole, covered, and then detonated. The detonated explosive sends a shock wave below the earth's surface that subsequently is reflected back to the surface from various subsurface rock layers. In rugged topography, a buggy-mounted drill is used or a portable drill is carried in by helicopter. Charges are placed in the hole as is done in a truck-mounted operation. Another portable technique is to carry the charges in a helicopter and place the charges on wooden sticks, or lath, about 3 feet above the ground. Usually, 10 charges in a line are detonated at once. In remote areas where there is little known subsurface data, a series of short seismic lines may be required to determine the subsurface geology. Subsequently, more extensive seismic lines are arranged to obtain the greatest amount of geologic information.

Seismic information can be obtained in 2-D or 3-D configurations. To obtain 3-D seismic information, the seismic sensors and energy source are located along lines in a grid pattern. This type of survey differs from the more common 2-D surveys because of the large volume of data and the intensive computerization of the data. The results are expensive to obtain but give a more detailed and informative subsurface picture. The orientation and arrangement of the components in 3-D seismic surveys are less tolerant of adjustments to the physical locations of the lines and geophones, but they are also more compact in the area they cover. Although alignment can be fairly critical, spacing of the lines often can be changed to increase the information collected. The depth of the desired geologic information will dictate the spacing of the grid lines, with smaller spacing detailing shallower formations. The 3-D surveys are very expensive and usually conducted after 2-D surveys or drilling has delineated a geologic prospect that will justify the extra cost. Extensive computer processing of the raw data is required to produce a useable seismic section from which geophysicists can interpret structural relationships to depths of 30,000 feet or more. The effective depth of investigation and resolution are determined to some degree according to the method used.

A typical drilling seismic operation can use 10 to 15 men operating five to seven trucks. Under normal conditions, 3 to 5 miles of line can be surveyed each day using the explosive method. The vehicles used for a drilling program include several heavy truck-mounted drill rigs, water trucks, a computer recording truck, and several light-weight pickup trucks for the surveyors, shot-hole crew, geophone crew permit person, and party chief. Helicopters are used to layout and pick up recording equipment.

Public roads, existing private roads, and vehicle routes are used. Off-road cross-country travel may be necessary to carry out tasks. Motor graders and (or) dozers may be required to provide access to remote areas. Concern about unnecessary surface disturbance has prompted government and industry personnel to plan surveys more carefully. As a result, earth-moving equipment is now rarely used in seismic

exploration work. Several trips a day are made along a seismograph line; this usually establishes a well-defined two-track vehicle route. The repeated movement back and forth along the line (particularly by the light-weight pickup trucks) defines the vehicle route. Spreading vehicles out so that vehicle routes are not straight and vehicles do not retrace the same route has, in some cases, prevented the establishment of new vehicle routes, thus reducing impacts. Drilling water, when needed, usually is obtained from the nearest source.

Each of the foregoing exploration methods has inherent strengths and weaknesses, and explorationists must decide which method will produce the most useful information, while being practical in regard to surface constraints (such as topography). Economics and past information also play a role in determining which method should be used. Reconnaissance type gravity and geomagnetic surveys can be conducted in areas where little information is available with the attendant lower costs and less impacts. More expensive and higher impact seismic surveys are conducted when more detailed information is required.

Geophysical Management (Permitting Process)

Geophysical operations on and off an oil and gas lease are reviewed by the appropriate federal surface management agency (i.e., Bureau of Land Management [BLM], U.S. Bureau of Reclamation, or U.S. Forest Service). Private and state surface land also is reviewed, but authorized by the Wyoming Oil and Gas Conservation Commission (WOGCC). Good administration and surface protection can be accomplished only through close cooperation between the operator and the impacted agency. Over an 8-year period (from 1995 through 2002) the Casper Field Office has processed 33 seismic exploration notices or permits (see Table D-1) on public lands. An average of four notices or permits can be expected to be processed each year.

Table D-1. Seismic Exploration Permits on Public Lands

Year	Number of Permits Approved
1995	5
1996	1
1997	3
1998	8
1999	6
2000	5
2001	1
2002	4
TOTAL	**33**

Note: Most of the seismic activity occurring within the Casper Field Office over the last 5 years has been 3-D seismic-authorizations related.

The responsibilities of the geophysical operator and the Field Manager are as follows:

- **Geophysical Operator**—An operator is required to file with the Field Manager a "Notice of Intent to Conduct Oil and Gas Geophysical Exploration Operations" (Notice of Intent). The Notice of Intent shall include a map showing the location of the line(s), all access routes, and ancillary facilities. The party filing the Notice of Intent shall be bonded. A copy of the bond or other evidence of satisfactory bonding must accompany the Notice of Intent. For geophysical operation methods involving surface disturbance, a cultural resources survey also is required. A pre-work field conference may be conducted. Earth-moving equipment shall not be used without prior approval. Upon completion of operations, including required rehabilitation, the operator is required to file a "Notice of Completion of Oil and Gas Geophysical Exploration Operations"

(Notice of Completion). If an operator/lessee planned on completing seismic activity as part of a lease activity, a Sundry Notice would be required to be filed along with a Notice of Intent and appropriate National Environmental Policy Act (NEPA) documentation would be need to completed prior to approval.

- **Field Manager**—The Field Manager must contact the operator after the Notice of Intent is filed and apprise the operator of the practices and procedures to be followed prior to commencing operations on BLM-administered lands. After the operations are completed, as specified by the Notice of Completion, the Field Manager shall complete a final inspection and notify the operator if the terms and conditions of the Notice of Intent have been met or that additional action is required. Consent to release the bond or termination of liability shall not be granted until the terms and conditions have been met.

State Standards

In Wyoming, the operator is required to register with the WOGCC. WOGCC standards for plugging shot holes, personnel safety, and so on, will be followed as specified in a memorandum of understanding (MOU) between the BLM and the WOGCC dated September 13, 1994, BLM MOU WY920-94-09-79. The MOU was entered into by and between the BLM and the WOGCC in accordance with the Federal Land Policy and Management Act (FLPMA).

Mitigation

Seasonal restrictions are imposed to reduce conflicts with wildlife, watershed damage, and hunting activity.

The most critical management practice is compliance monitoring during and after seismic activity. Compliance inspections during the operation ensure that stipulations are being followed. Compliance inspections upon completion of work ensure that the lines are clean and the drill holes are plugged properly.

OIL AND GAS LEASING

The Mineral Leasing Act provides that all public lands are open to oil and gas leasing unless a specific order has been issued to close an area. Based on the Federal Onshore Oil and Gas Leasing Reform Act of 1987, all leases must be exposed to competitive lease sales. Lands, for which bids are not received at the lease sale, will be available for noncompetitive leasing for a period not to exceed 2 years. Competitive sales will be held at least quarterly and by oral auction. Competitive and noncompetitive leases are issued for a term of 10 years or for as long as oil and/or gas are produced. The federal government receives yearly rental fees on nonproducing leases. Royalty is received at the rate of 12.5 percent of the total saleable production, one-half of which is returned to the State of Wyoming.

In January 2003, federal oil and gas leases covered 1,738,185 acres, or about 39 percent of the federal mineral estate in the planning area. About 27 percent of the acreage leased was held by oil and gas production. Acreage leased is almost entirely in Natrona and Converse counties.

Lease stipulations may be attached to each parcel and become part of the lease after sale. Initially, stipulations are attached to a parcel by the state office leasing section from various databases. The parcel list is segregated and sent to the field office that has the majority of the parcel lands in its area. In the field office, the parcel is reviewed by the Wyoming Game and Fish Department and a BLM group of resource and NEPA specialists to ensure that lands conform to the Resource Management Plan (RMP), the

stipulations are correct, and that any missing stipulations are included. This completes the process and allows the parcel to be included in a sale package.

The authorized officer has the authority to relocate, control timing, and impose other mitigation measures under Section 6 of the Standard Lease Form and in accordance with 43 CFR 3101.1-2. This authority is invoked when lease stipulations are not attached to the lease or new resources are discovered on a lease. Lease stipulations are conditions of lease issuance that provide protection for other resource values or land uses by establishing authority for delay, site changes, or the denial of operations within the terms of the lease contract. These stipulations adhere to the Uniform Format for Oil and Gas Lease Stipulations prepared by the Rocky Mountain Regional Coordinating Committee in March 1989. The stipulations are specified for each applicable parcel in the Notice of Competitive Oil and Gas Lease Sale and are intended to inform interested parties (i.e., potential lessees, operators) that certain activities will be regulated or prohibited unless the operator and the surface management agency arrive at an acceptable plan for mitigation of anticipated impacts. These stipulations are attached to the whole lease, regardless of whether the protection measure is in only a specific portion of the lease. Lease stipulations are based on the known resource requirements and land uses as specified in NEPA documentation. New science, comprehensive documentation of resource requirements, land pattern interference, and ongoing monitoring of the effectiveness of a stipulation may allow granting of a waiver, exception, or modification to a stipulation. A lease stipulation waiver is a permanent exemption to a lease stipulation. An exception is a one-time exemption to a lease stipulation and is determined on a case-by-case basis. A modification is a change to the provisions of a lease stipulation either temporarily or for the term of the lease.

Drilling Permit Process

A federal lessee or the operator of record is governed by procedures set forth by the Onshore Oil and Gas Order Number (No.) 1, "Approval of Operations on Onshore Federal and Indian Oil and Gas Leases," issued under 43 CFR 3164. These procedures cover the full gamut of operations on federal oil and gas leases from initial permitting of the well to subsequent operations to final abandonment. In the initial permitting process, the operator selects the location of a proposed drill site. This selection is based on WOGCC spacing requirements, the subsurface geology, the topography, and the avoidance of known protected surface resource values.

Spacing requirements are established by the WOGCC to protect the correlative rights of offsetting mineral owners and efficiently recover the resource. This applies to all mineral ownership (i.e., fee, state, and federal minerals). The spacing requirements are considered to be located at the subsurface point of production. Wells must be drilled within 200 feet of the center of a legal subdivision, such as a quarter section, depending on the spacing assigned to the particular area. A proposed location may be moved beyond the designated tolerance by a spacing exception granted by the WOGCC. A spacing exception requires notification of the offsetting mineral lease owners and, if there is a protest, the matter must be presented at a public hearing with full evidence of the need to relocate the well before a decision can be made by the WOGCC. The general spacing rules for the WOGCC is one well per 40 acres. Well spacing in the planning area, however, varies from one well per 10 acres in the Salt Creek Oilfield to one well per 640 acres.

BLM may require a lessee to drill a well if it is determined federal minerals are being drained by an adjacent well completed in private or state minerals. This can cause conflicts with sensitive surface resources if after a thorough environmental review, it is determined the economics are not sufficient to directionally drill a well away from the sensitive resource.

Permitting

After the operator makes a decision to drill a well, the well, access road, and pipeline can be surveyed and staked without notice to the BLM. Cultural resource inventories also can be obtained without notice.

Notice of Staking (NOS)—After the operator makes the decision to drill a well, the operator must decide whether to submit an NOS or an application for permit to drill (APD). The NOS is an abbreviated notice that includes an NOS form, a staked location map, and a sketched site plan. This notice is posted for a 30-day public review and begins the processing timeframe for approval of the APD. The NOS triggers the on-site inspection of the well site, which determines whether any conflicts with surface resource values are evident, as well as provides the preliminary data to assess which additional items are necessary to complete the APD.

Application for Permit to Drill (APD) —The operator can submit a completed APD in lieu of an NOS, but, in either case, no surface-disturbing activity can be conducted in conjunction with drilling operations until the Field Manager approves the APD.

If the APD option is used, an APD is submitted to the Field Manager and a field inspection is held with the operator and any other interested party. The purpose of the onsite field inspection is to evaluate the operator's plan, to assess the situation for possible impacts (surface and subsurface), and to formulate resource protection stipulations. To lessen environmental impacts, a site can be moved, reoriented, or resized, within certain limits defined in 43 CFR 3101.1-2, at the onsite inspection. The proposed access road or pipeline also can be rerouted. If necessary, site-specific mitigations can be added to the APD as Conditions of Approval (COA) for protection of surface and/or subsurface resource values in the vicinity of the proposed activity.

The Casper Field Office is responsible for preparing environmental documentation necessary to satisfy the NEPA requirements and for providing any mitigation measures needed to protect the impacted surface resource values. Consideration also is given to the protection of subsurface water resources. When processing an APD, the BLM geologist is required to identify the maximum depth of usable water as defined in Onshore Oil and Gas Order No. 2. Usable water is defined as that water containing 10,000 parts per million (ppm) or less of total dissolved solids. Water of this quality is to be protected usually by surface casing and cement. Determining the depth to fresh water requires specific water quality data in the proposed well vicinity or geophysical log determination of water quality, depending on existing well proximity and log availability. If water quality data or logs from nearby wells are not available, the area within a 2-mile radius of the proposed well is checked for water wells. If wells exist, surface casing is required to be set below the deepest fresh water zone found in these wells or to be placed below a depth reasonably estimated for future water wells. Usable water can be found at considerable depths and be below the surface casing setting point. In this case, surface casing is set through the fresh surface waters, and cement is required to protect the remaining useable water from the underlying nonuseable water. The depth of the casing is specified to be below a depth reasonably anticipated for future useable water recovery.

When final approval is given by the BLM, the operator can commence construction and drilling operations. Approval of an APD is valid for 1 year. If drilling does not begin within 1 year, the APD can be cancelled or stipulations can be revised prior to extending the APD for another year.

Economic conditions dramatically affect drilling activity and at the present time, oil and gas markets are buoyant nationwide. However, a downturn in the petroleum market could create a significant decrease in the number of drilling wells. Lower prices potentially could reduce the number of coalbed natural gas (CBNG) wells drilled because of the higher cost of these operations. Increases in activity have occurred

over the past 3 years because of high gas prices. The Casper Field Office approved 37 drilling applications in 2000, 26 in 2001, 117 in 2003, and 162 in 2004. Approximately twice that number of fee and state wells has been approved.

Drilling depths in the planning area range from a few hundred feet in the Powder River Basin CBNG wells area to more than 19,000 feet in the Wind River Basin. The vast majority of the wells drilled in the resource area require 30 to 90 days to drill and complete. Some deep wildcat wells (17,000 to 20,000 feet) may require a year or more to drill and complete.

Rights-of-Way Requirements

Before an APD can be approved for some projects, a rights-of-way (ROW) may be required. If the project access road (including water haul road), pipeline, or powerline crosses public land outside the oil and gas lease or unit, ROW authorization may be required in addition to an approved APD for the well.

If an ROW is needed, payment of processing and monitoring fees to reimburse the United States for the processing and monitoring costs will be required. In addition, under new 2005 ROW regulations, the operator will be required to pay rental fees for the use of the ROW on federal land. ROWs associated with drilling a well may be granted for the duration of production from the well.

An ROW is not required for "casual use." Examples include driving vehicles on existing roads, sampling, surveying, marking routes, collecting data to prepare an application for a proposed oil and gas well or ROW, and performing certain activities that do not cause any appreciable disturbance or damage to the public lands, resources, or improvements. The regulations governing ROWs are contained in 43 CFR Group 2800.

Surface Disturbance Associated With Exploratory Drilling

Upon receiving approval to drill the proposed well, the operator moves construction equipment on existing roads to the point where the access road will begin. Generally, the types of equipment include dozers (track-mounted and rubber-tired), scrapers, and motor-graders. Moving equipment to the construction site requires moving several loads (some overweight and over width) on public and private roads. Existing roads and vehicle routes are improved in places and occasionally culverts and cattle guards are installed as specified in the approved APD.

The length of the access road varies. Generally, the shortest feasible route is selected to reduce the haul distance and construction costs. Environmental factors or the landowner's wishes may dictate a longer route. In rough terrain, the type of construction is sidecasting (using the material taken from the cut portion of the road to construct the fill portion); slightly less than one-half of the roadbed is on a cut area and the rest is on a fill area. Roads are constructed to BLM standards, usually with a l4-foot (single lane) or 24-foot (double lane) running surface (in relatively level terrain). Soil texture, steepness of the topography, and moisture conditions may dictate surfacing the access road. The total acreage disturbed for each mile of access road constructed varies according to the steepness of the slope.

Well locations are constructed by one of three different general types of construction, but, in every case, all soil material suitable for plant growth is first removed and stockpiled in a designated area. Sites on flat terrain usually require little more than removing the topsoil material and vegetation. Drilling sites on ridge tops and hillsides are constructed by cutting and filling portions of the location. The majority of the excess cut material is stockpiled in an area that will allow it to be recovered easily for rehabilitation. It is important to confine extra cut material in a stockpile rather than cast it down hillsides and drainages where it cannot be recovered for rehabilitation.

The amount of level surface required for safely assembling and operating a drilling rig varies with the type of rig and the depth and type of the well. The amount of level surface required averages 300 by 400 feet and should be constructed so that the drill rig can be placed on the cut surface instead of fill material to prevent the derrick from leaning or toppling as a result of the settling of uncompacted fill material.

In addition to the drilling rig footprint, a reserve pit is constructed, usually square or oblong, but sometimes in another shape to accommodate topography. Generally, the reserve pit is 8- to 12-feet deep, but may be deeper to compensate for smaller length and width or deeper drilling depths. Depending on the relationship of the location to natural drainages, it may be necessary to construct water bars or diversion ditches. The area disturbed for construction depends largely on the steepness of the slope. Depending on the soil permeability, pits can be lined with an impermeable material to contain the drilling fluids. If water is encountered while digging the reserve pit, a closed mud system, comprising steel tanks, may be required. For oil base mud, closed systems usually are mandatory, and the mud and cuttings must be recycled or disposed of in an approved manner.

Usually, drilling activities begin within a week or two after the location and access road have been constructed. The conventional drilling rig and associated equipment are moved to the location and erected. Moving a drilling rig may require moving 10 to 25 truckloads of equipment on public highways and private roads. The derrick, when erected, is approximately 160-feet high. Drilling rigs for CBNG wells are much smaller, usually truck-mounted, require fewer loads, and are less structurally imposing.

Water for drilling is hauled to rig storage tanks or transported by surface pipeline. Water sources are usually existing water wells or commercial water sources. Occasionally, water supply wells are drilled on or close to the site. The operator must obtain a permit from the Wyoming State Engineer for the use of surface or subsurface water for drilling and any applicable BLM surface use permits. When drilling commences, and as long as it progresses, water is continually transported to the rig location. Approximately 5,000 barrels (or 210,000 gallons) of water are required to drill an oil or gas well to the depth of 9,000 feet. More water is required if circulation is lost or permeable zones are encountered that cannot withstand the pressure of the drilling fluid.

Drilling Operations

Rotary Drilling

Initially, drilling proceeds rapidly because of the less competent nature of shallow formations. Drilling is accomplished by rotating the drill string and putting variable weights on the bit located at the bottom of the string. While drilling, the derrick and associated hoisting equipment bear a majority of the drill string's weight. The combination of rotary motion and weight on the bit causes rock to be gouged away at the bottom of the hole. The rotary motion is created by a square or hexagonal rod called a kelly, which fits through a square or hexagonal hole in a large turntable called a rotary table. The rotary table sits on the drilling rig floor and as the bit advances, the kelly slides down through it. When the kelly has gone as deep as it can, it is raised, and a new piece of drill pipe about 30 feet in length is attached in its place. The drill pipe is then lowered, the kelly is reattached, and drilling recommences. When the bit becomes dull, it is necessary to "trip" the drill string and replace the bit. This is a time-consuming process of withdrawing 90-foot sections of the drill pipe until the bit is out of the hole. This process requires a large part of the total drilling time and may cause other hole problems. New bits constructed with modern metals and manufactured polycrystalline diamonds, along with down-hole mud motors, have revolutionized drilling operations, whereby thousands of feet of hole can be drilled with one bit run. The mud motor is turbine-driven by high-pressure mud and is placed at the top of the bit to enable more rotational power to be transmitted to the bit, thus increasing penetration rates.

Drilling mud is circulated through the drill pipe to the bottom of the hole, through the bit, up the annulus of the well, across a screen that separates the rock chips, and into holding tanks from which finer sediments settle from the mud before it is pumped back into the well. The mud is maintained at a required weight and viscosity to cool the bit, reduce the drag of the drill pipe on the sides of the hole, seal off any porous zones, contain formation fluids to prevent a blowout, and bring the rock chips to the surface for disposal. Various additives are used in maintaining the mud at the appropriate viscosity and weight. Most of the mud consists of bentonite, a naturally occurring mineral that is mined in Wyoming. Some of the additives are caustic, toxic, or acidic, but these hazardous additives are used in small amounts during the drilling operations and later contained within the reserve pit.

Drilling is usually accomplished with water or light mud to depths within about 1,000 feet of the prospective formation. Water and natural clays recovered during the drilling operation or light drilling mud allow fast drilling rates and the attendant reduction in mud chemicals. Once the bit reaches the target depth, the mud system gradually is made more sophisticated by adding bentonite, chemicals, and natural weight materials to reduce water loss to the potential producing zones and to control the subsurface pressure. In almost all cases, the subsurface pressure is higher than an equivalent water column and it is necessary to increase the mud weights to control the pressure and prevent a blowout or uncontrolled flow of formation fluids. Many wells are drilled in an underbalanced condition whereby the mud pressure is slightly less than the formation pressure, which increases the penetration rate and reduces the time on the well or in the formations of interest. This reduces the potential of damaging the formation, with the attendant loss of flow capacity and recovery. The wells are always overbalanced for safety requirements when a bit trip is made, the well is logged, or the casing is installed.

Drilling operations run continuously 24 hours a day, 7 days a week. The crews usually work three 8-hour shifts or two 12-hour shifts a day. Pickup trucks or cars are used for workers' transportation to and from the site. On remote isolated sites, a camp may be established to house the crews, reducing the travel requirements. Other operations, such as cementing, running casing, and rig maintenance will require road travel, sometimes with heavy equipment.

Upon completion of drilling operations, a determination is made regarding the productive potential of the well. If oil or gas is not discovered in commercial quantities, the well is considered dry. The operator is then required to follow BLM procedures to properly plug the dry hole. The drill site and access road are then rehabilitated in accordance with the COA attached to the APD and the plugging approval. If the well is a producer, drilling rig operations continue until the production casing is cemented into the well prior to removing the drilling equipment from the location.

Logging

Geophysical logs are obtained by running various instruments into the hole on a wire cable. Logs are usually run at a depth point where casing will be installed. A log usually is not run before surface casing is set, but in most instances, log-recording natural gamma radiation is run through the surface casing to determine the geology of that section. Logs can help determine water resistivity, hydrocarbon saturations, natural gamma radiations, porosity of the rock by density, nuclear receptivity and sonic measurements, permeability, pressure, temperature, hole geometry, and subsurface track. Logs are used to evaluate whether the well is dry or has the potential for a satisfactory completion. Logs also delineate the various geologic horizons; hydrocarbon zones; fresh, usable, and unusable water; and sands, shale, limestones, coals, and other minerals. The hydrocarbon intervals usually are randomly situated in each well, and logs are required to specify these intervals so that they can be perforated and stimulated during the completion program. Normally, logs recording resistivity and a combined porosity log of density and nuclear receptivity are run in the well. The dual porosity logs are a direct indicator of gas because the measured values can be compared to provide contrasting porosities.

Casing

Various types of casing are placed in the drilled hole to enhance completion operations and safety. Casing is a string of steel pipe composed of approximately 40-foot lengths of pipe that are threaded together. Casing is cemented into the well to protect against migration of fluids within the hole and to isolate the productive zones so they can be completed and produced without interference from other zones containing hydrocarbons or water. Hole deviation, depth, bore hole environment, placement of centralizers (if any), and a myriad of other factors affect the integrity of the casing and cement job and must be considered in the original design.

Surface casing that is properly set and cemented also protects surface aquifers from contamination by drilling and production operations. Surface casing should be set to a depth greater than the deepest fresh water aquifer that could be reasonably developed. The operator shall isolate fresh water-bearing and other usable water containing 5,000 ppm or less of total dissolved solids (tds) and other mineral bearing zones and protect them from contamination (43 CFR 3162.5-2). Usable water may exist at great depths, but these aquifers are not normally considered to be important water sources. Surface casing is designed to be large enough to allow subsequent strings of smaller casing to be set as the well is drilled deeper. Cement is placed in the annulus of the surface casing from casing shoe to ground level. The surface casing is the first string on which blowout prevention equipment is installed. The blowout prevention allows the well to be shut-in at any time that conditions warrant, protecting against unanticipated formation pressures and allowing safe control of the well. Blowout prevention equipment is tested and inspected regularly by both the rig personnel and the inspection and enforcement branch of the BLM. Minimum standards and enforcement provisions are part of Onshore Order No. 2. Well-trained rig personnel are a necessity for proper blowout prevention.

Generally, only the bottom portion of intermediate or production casing is cemented, which often leaves some uncemented intervals behind the casing. The annulus is filled with sufficient cement to provide adequate protection from interzonal migration of unsuitable water and hydrocarbons. Production casing or production liner is designed to provide isolation of oil and gas formations and to provide a high-pressure conduit to the hydrocarbon zones that allows stimulation of these intervals to improve the productivity.

During completion operations, the production casing or liner is perforated into zones containing the oil or gas. A zone of low permeability (ability to permit fluid flow) might require "fracturing" with a medium such as water to carry sand or other proppants designed to hold open the artificially created flow channels or fractures. Several zones in one well may be stimulated in this manner and flowed back to remove debris and excess proppant, and to determine if commercial hydrocarbon producing rates can be established. This process might be used for both gas and oil wells; testing of multiple zones can require a period of several weeks. Once completion operations are finished, wellhead and production equipment is installed.

Oil and Gas Exploratory Units

Surface use in an oil or gas field may be affected by unitization of the leaseholds. In areas of federal and mixed mineral ownership, an exploratory unit can be formed before a wildcat exploratory well is drilled. The boundary of the unit is based on geologic data and attempts to consolidate the interests in an entire structure or geologic play. The developers of the unit enter into an agreement to develop and operate as a single entity, without regard to separate lease ownerships. Costs and benefits are allocated according to agreed-upon terms. Development in a unitized field can proceed more efficiently than in a field composed of individual leases because competition between lease operators and drainage considerations is not a primary concern. Unitization also can reduce surface use requirements because all wells are operated as though under a single lease, and operations can be planned for more efficiency. Duplication of

field-processing facilities is eliminated, and consolidation of facilities into more efficient systems is probable. Unitization also can involve wider spacing than usual or spacing based on reservoir factors rather than a set rule. This could result in fewer wells and higher recovery efficiency. The WOGCC allows wells to be placed in units at any location as long as they are placed within 1,120 feet of the unit boundary. Through planning, access roads usually are shorter and better organized, facilities usually are consolidated, and well efficiency is maximized to a degree not seen in individual lease operations.

Fifty-six oil and gas unit agreements are lying wholly or partly within the planning area. These units encompass approximately 345,757 acres, or about 4 percent of the planning area. Thirty-four of the units have been primarily oil production. The remaining units primarily produce either gas or substantial quantities of both oil and gas. The oldest unit, Salt Creek, was established in 1939. No CBNG units have been established in the planning area.

Field Development

Full field development is analyzed in an Environmental Assessment or Environmental Impact Statement (EIS) after sufficient confirmation wells are drilled. The operator generally can estimate the extent of drilling and disturbance required to extract and produce the oil and gas at that time. Many fields go through several development stages. A field can be considered fully developed and produce for many years when it is determined that a well can be drilled to a deeper pay zone or a new interval is discovered to be economically attractive. In this situation, there is generally little new disturbance because the old well bores or the old well pads are used for the new completions. A new stage of field development, such as infill drilling, can lead to increases in roads and facilities. All new construction, reconstruction, or alterations of existing facilities, including roads, flow lines, pipelines, tank batteries, or other production facilities must be approved by the BLM and may require a new environmental document. Throughout field development, partial restoration and rehabilitation is required to reduce the surface impacts to the minimum required to produce the resource.

The most important factor in further development of an oil or gas field is the economics of production. When an oil or gas discovery is made, a well-spacing pattern can be established before development drilling begins. This depends on the current statewide or area-wide spacing. Well spacing is regulated by the WOGCC. Factors considered in the establishment of a spacing pattern include data from the discovery well that translate into recovery efficiency. These data include porosity, permeability, pressure, composition of reservoir and fluids, depth of formations, well-production rates, and the economic effect of the proposed spacing on recovery. These data are relatively sparse in the initial phase of development and extended production permits refinement of these values. Because these data are so tentative, the WOGCC tends to define large spacing until the data are more conclusive. The statewide spacing for oil production is 40 acres. Spacing for oil wells usually varies from 40 to 320 acres per well, but can be as little as 2-½ acres per well. Spacing for gas wells is generally from 160 to 640 acres per well, but may be as small as 10 acres if reservoir recovery efficiency dictates that spacing. Spacing requirements can pose problems in selecting an environmentally sound location or in the cumulative overall impacts. Reservoir characteristics determine the most efficient spacing to achieve maximum recovery. If an operator determines that a different spacing is necessary to achieve maximum recovery, the state (with input from the BLM) may grant exceptions to the spacing requirements.

Production

Gas, oil, and water are being produced in the planning area by means of natural flow and artificial lift (gas and electric pumping units and submersible pumps).

Gas Production

A typical gas well facility contains methanol injection equipment (to keep production and surface lines from freezing), a separator (which separates gas, oil, and water), a dehydrator (which uses glycol or calcium chloride to extract entrained water in the gas), and an orifice meter. An intermitter is sometimes used to either shut-in the well to build up pressure or to blow the well down if it is being loaded with fluid. If the gas well is producing some oil or condensate, oil tanks are used to store the oil or condensate until it is sold via truck or pipeline. Pipeline quality gas at the wellhead requires a minimum of processing equipment. As the quality of gas decreases with the increased presence of water, solids, or liquid hydrocarbons, the amount of processing equipment increases. Water or liquid hydrocarbons in the gas are removed before the gas is sold, usually in the separation equipment near the wellhead. If liquid hydrocarbons are present, storage facilities (tank batteries) are required to store the liquids until they accumulate in sufficient quantities to be hauled out by large trucks. Gas dehydration equipment also may be present to remove water entrained in the gas to a water content defined by pipeline specifications. In 2002, 62.9 billion cubic feet of natural gas (or 3.6 percent of Wyoming's total gas) was produced in the planning area. Gas production was 39 percent more than in 1974, a 4.9 percent annual increase in production. These data are compiled from WOGCC files. Gas production curves are included in the Reasonable Foreseeable Development (RFD) scenario for oil and gas developed for the planning area. The RFD is available at http://www.blm.gov/rmp/casper.

Gas that occurs with oil is separated and either vented at the tank battery when uneconomical to capture and sell or collected into feeder lines leading to compressors that boost the pressure to the transportation system. If enough casinghead gas is separated to make it economical for marketing, a plant can be constructed to process the gas, or a pipeline can be constructed to carry the product to an existing plant. If the volume of casinghead gas is insufficient to warrant treatment in a gas plant, it is usually used as fuel for pump engines in the field or as heating fuel for the heater-treaters. Gas is flared or vented into the atmosphere if it exceeds the fuel requirements on the lease but is not in commercial quantities. Wyoming law prohibits the flaring or venting of natural gas. Exceptions allowed by the WOGCC are (1) during testing of a new well, or (2) when the amount of gas produced with the oil is so small that pipeline construction is not practical. Otherwise, if a well produces both oil and gas, provisions for conserving the gas must be made before oil production can continue. BLM Notice to Lessee 4A requires that all gas that is not used on the lease, vented, or flared without prior authorization either by the BLM or the WOGCC/BLM or avoidably lost, is subject to royalty obligations. Standard APD COAs allow only 30 days of testing or 50-million cubic feet of vented or flared gas, whichever occurs first. If it is found that gas is produced beyond this point, a determination may be made that the gas was avoidably lost and subject to royalty obligations.

Oil Production

Oil is generally produced using artificial lift methods (pumping units). The oil production equipment, heater-treater, tank battery, and holding facility for production water are either placed on a portion of the location (on cut rather than fill) and located a safe distance from the wellhead or placed at a centralized facility that services a number of wells with pipeline connection. Earthen dikes to contain accidental spills surround the heater-treater and tanks. Either all the facilities or only the produced water pit (if present) will be fenced. Production facility colors are required to be from the standard color chart and are specified in the APD COAs.

Production from several wells on one lease can be carried by pipeline to a central tank battery. Use of a central tank battery can depend on whether the oil is from the same formation, the same lease ownership, or multiple lease ownerships and formations if a commingling agreement is approved. Generally, because of the nature of the oil, adequate separation of oil and water is obtained only through applications of heat.

The fluid stream arrives at a separator point at which the flash gas is taken off and, in most cases; this flash gas is used for lease operations. The remainder of the flash gas is either compressed and sold or flared. Flash gas is defined as solution gas liberated from the oil through a reduction in pressure. Water and oil also are being separated at this point by gravity segregation. The oil is sent to storage tanks and the water is sent to a disposal or injection facility. Two main methods of oil measurement are used—lease automatic custody transfer units and tank gauging. Measurement is required by 43 CFR 3162.7-2 and Onshore Order No. 4 to ensure proper and full payment of federal royalty.

Oil wells can be completed as flowing (those wells with sufficient underground pressure to raise the oil to the surface) or, if the pressure is inadequate, they are completed with the installation of subsurface pumps. A pumping unit usually mechanically powers the subsurface pumps. Pumping units come in a variety of sizes, the larger ones reaching a height of 30 to 40 feet. Internal combustion engines or electric motors power the units. Fuel for the engines may be casinghead gas or propane. In cases in which large volumes of water are produced with the oil, electric submersible pumps can be installed. These pumps may produce up to 6,000 barrels of fluid per day at an oil cut of one-half of 1 percent oil. In 2002, almost 6-million barrels of oil, about 10.4 percent of Wyoming's total oil production, was produced in the planning area. Oil production was about 25 percent of the oil production in 1974, a 4.8 percent average annual decrease in production. The application of enhanced oil recovery technology at the Salt Creek Field is expected to increase oil production from the planning area, at least in the short term. These data are compiled from WOGCC files. Currently, a large portion of the oil is condensate produced with natural gas. Oil production curves are included in the RFD scenario for oil and gas developed for the planning area.

Coalbed Natural Gas Production

CBNG production combines high water production rates of some oil fields with low-pressure operations of some gas fields. Because of the reservoir characteristics of coal, high water production rates are initially required to dewater the reservoir and allow gas to be liberated from cleat surfaces within the coal. In a coal reservoir, gas primarily is trapped on the face of the coal within the cleat system via molecular attraction. Pressure must be reduced to liberate the gas molecules from the coalface. The production history shows that water production rates begin high, with little or no gas. The water rate then drops at a constant rate with increasing gas rates until a maximum rate is achieved relative to the original gas saturation and reservoir pressures. The gas rate then declines to the economic limit. This process is the exact opposite of that associated with most oil and gas production, which starts at high hydrocarbon rates and low water rates and advances to low hydrocarbon rates and high water rates. The reservoir depths of CBNG production generally are shallow (less than 2,000 feet) compared with most oil and gas production in the planning area. The depth limit is based on coal permeability, which is highly sensitive to overburden weight. A CBNG operation usually comprises a high-capacity submersible or progressive cavity pump, with water produced out of the tubing, and low-pressure gas produced out of the casing. Centralized facilities collect the gas for compression to pipeline pressures and the water for disposal. Electric power usually is used to power the well pumps and is connected to the well via a subsurface cable laid with the water and gas lines. The producing well pad is very small, with only the wellhead and an insulating house to cover the wellhead. The centralized production facilities contain wellheader buildings, where the individual well gas is measured and where collection tanks, injections wells, and pumps for disposal of the water and multistage compressors are housed to bring the very low pressure gas to sales line pressure. Sometimes the water can be disposed of in the local drainages if the Wyoming Department of Environmental Quality (DEQ) and the BLM approve of this type of disposal. Currently, CBNG production in the planning area is in its infancy, and little history is available regarding its economics and production rates. As of January 2005, only 50 CBNG wells had been drilled in the planning area. Nine of these wells had been plugged, while the rest were shut-in. Little producing history is available for these wells.

Water Production

Associated water produced with the oil, gas, or CBNG is disposed of by trucking the water to an authorized disposal pit, by placing the water in lined or unlined pits, by discharging the water into surface drainages, or through subsurface injection. Water disposal is controlled by the Wyoming DEQ for surface or near-surface disposal or by the WOGCC for subsurface disposal and secondary recovery purposes. The quality and quantity of the water often dictates the appropriate disposal method, and the Wyoming DEQ has primacy through the U.S. Environmental Protection Agency (EPA) to approve surface disposal of this water.

Produced water also is used in enhanced recovery projects. The Casper Field Office has been handling large volumes of produced water for a long period of time. This area was among the first in establishing secondary recovery operations in Wyoming, with several secondary recovery units created in the late 1950s. Secondary recovery generally is considered to be water flooding of a depleted reservoir. Annual water production in the planning area was almost 350 million barrels. About 80 percent of the water production came from the Salt Creek Field and about 89 percent was from federal wells. Rates of future water production will be influenced by the completion of new CBNG wells and reduction in water production expected at the Salt Creek Field. Water production from CBNG wells could increase annual water production by about 20 percent. Enhanced oil recovery from Salt Creek Field could decrease water production by an unknown, but significant, amount.

Most water produced from the Salt Creek Field will be re-injected, while most water from CBNG wells will be discharged on the surface. Water production per (CBNG) well is expected to be about 800,000 barrels (103 acre feet) over a 7- to 8-year life.

Production Problems

Weather extremes pose problems for producers by causing roads to become impassable, equipment to malfunction, and flow lines, separators, and tanks to freeze up. Other problems producers face in the area are production of hydrogen sulfide (H_2S), carbon dioxide (CO_2), and paraffin; corrosion; electrolysis; and broken flow lines, resulting in oil and produced water spills.

Secondary and Enhanced Oil Recovery

Secondary oil recovery projects are initiated because of the limited production efficiency of primary recovery and water-flood projects. Locale can be important in enhancing oil recovery projects. Proximity to a CO_2 source is a factor in choosing a CO_2 project. A source of fresh or treatable water is needed for steam-flood or chemical projects. Accessibility of cheap natural gas is a consideration for gas injection projects. Oil and gas prices play a very important role in determining whether an enhanced oil recovery project will be viable and deciding what type of recovery project would be appropriate. A large number of older oil fields within the planning area and a number of different types of secondary projects have been used to increase production. Presently, no active hydrothermal injection projects exist within the planning area.

Gas reservoirs typically have no secondary recovery associated with the recovery of gas. This is because natural gas is produced by expansion resulting from the reduction of reservoir pressure. Typically, a high reservoir recovery factor can be expected from this expansion process unless the reservoir is of such low permeability that economics becomes a factor in the recovery efficiency. Economics is a determining factor because of the expense of operating compression facilities to reduce the reservoir pressure to the minimum.

In rare cases in which the gas is very rich and contains a large quantity of entrained liquids, secondary recovery uses inert gases such as nitrogen or dry natural gas to keep the reservoir pressure above the

condensation point to produce the maximum amount of liquids. This secondary recovery process requires sweeping the reservoir with undersaturated gas to entrain and sweep out the rich gas. After this secondary process is accomplished, especially in dry natural gas secondary recovery operations, the reservoir is depressurized to recover the maximum amount of the remaining gas reserves.

Secondary recovery in coal reservoirs has been tested in the San Juan Basin and found to be technically feasible. It involves the molecular replacement of natural gas by CO_2 or nitrogen. This process has also been touted as a method of sequestering CO_2 to remove greenhouse gas from the atmosphere. A large quantity of CO_2 is being pipelined to the Salt Creek Field, which is west of the projected CBNG development, so this process potentially may be used in the future if the economics are favorable.

An oil reservoir typically contains oil, gas, and water trapped within a rock matrix under pressure. Because of the pressure, much or all of the gas is dissolved in the oil. "Primary drive" is accomplished by the expansion of gas in solution, which forces oil out of the reservoir into the well and up to the surface. Oil flowing out of the reservoir drains energy from the formation and the primary drive diminishes. To keep oil flowing in the reservoir, pressure drawdown is required, and subsurface pumps may be used to lift oil to the surface. As reservoir pressures continue to drop, solution gas in the oil escapes, forming bubbles in the pore space. These bubbles further retard the flow of oil and increase the gas saturation and flow of solution gas. This process accelerates as the pressure declines, and at some point, production rates become uneconomical, with as much as 80 percent of the original oil remaining in the reservoir. Currently, in the United States, primary oil recovery accounts for less than half of the current oil production. The remaining oil is produced via secondary and enhanced recovery techniques.

Two basic secondary recovery methods are in use: (1) water flooding and (2) displacement by gas, including CO_2. The preferred secondary recovery method is water flooding. This process involves injecting water into oil reservoirs to maintain or increase pressure. The process is usually most efficient when the pressure has not fallen to the point at which the reservoir is highly saturated with gas. Reservoir heterogeneity in the form of fractures, directional permeability, and thin zones may limit the success of this process.

The process of displacement by gas is a less popular secondary recovery technique. Historically, produced gas was considered a waste product and was flared (burned) at the point of production. Later, it was recognized that the energy could be conserved and the recovery of oil increased if the produced gas was re-injected into the reservoir. Increased production was achieved by (1) maintaining reservoir pressure by injecting the gas into the existing gas cap and (2) by injecting the gas directly into the oil-saturated zone, creating an immiscible gas drive that displaced the oil. To achieve miscibility, the reservoir must have reasonably high pressures and temperatures and contain high-gravity oil. Many gas-injection projects use the water and gas (WAG) process (i.e., inject water and gas alternately to achieve better contact with the oil within the reservoir). Currently the high price and demand for natural gas has precluded this type of secondary recovery.

In 2002, there were 21 active water-flooding projects in 11 fields in the planning area. Essentially, all the floods are very mature, and economics becomes a major factor. Under the current high oil price environment, these floods should continue to produce, but it is estimated that within the life of the plan, many will reach their economic limit and be abandoned. A potential caveat is the potential for tertiary CO_2 injection, as described below. The State of Wyoming is currently funding a major study related to the potential for CO_2 tertiary recovery, which may result in increased incentives via the tax system to implement this potential process and extend the life of these fields.

In 2002, there were five active gas-injection projects within the planning area. Gas-injection projects are used to maintain reservoir pressures or to aid in secondary recovery of oil or for enhanced oil recovery.

Tertiary projects use improved recovery methods that not only restore formation pressure, but also improve oil displacement or fluid flow within the reservoir. They may include projects such as water-polymer floods, water-micellar floods, or water-carbon dioxide floods. In 2002, there were three active tertiary projects within the planning area.

Some reservoirs contain large quantities of heavy oil that cannot be produced using normal or secondary methods. Thermal drive processes in which heat is introduced from the surface or developed in place in the subsurface reservoir may stimulate these. In the surface introduction process, hot water or steam is injected. Raising the temperature of heavy oil reduces the viscosity and makes the oil more mobile. Thermal recovery techniques may be considered at the West Poison Spider and South Casper Creek fields since heavy oils are present in these fields. In the in-situ process, both heavy and light oils can be processed. Spontaneous or induced ignition within the reservoir is induced by injected air to develop a fire front that burns the hydrocarbons. Evaporation of the lighter ends immediately ahead of the fire front and, later, condensation is the primary recovery mechanism. The remaining hydrocarbons are consumed by the fire and generally are not considered of any value. These techniques are very expensive and must have large reserves and thick pay zones to be economical. No active hydrothermal injections projects exist in the planning area.

Several chemical drive techniques are currently in use, including (1) polymer flooding, (2) caustic flooding, and (3) surfactant-polymer injection. These methods attempt to change reservoir conditions to allow recovery of additional oil. Caustic and surfactant-polymer flooding have not been economical in the past, and unless a breakthrough in technology is achieved, they probably will not be considered during the planning period. Polymer flooding is an economically viable process, but is used mainly in viscous reservoirs with high permeability. Currently, no such reservoirs exist in the planning area, but future discoveries could be made.

Carbon dioxide appears to have the best potential for enhanced and tertiary recovery methods. CO_2 is miscible with oil at relatively low pressures and temperatures, and can be used with oil with a wide range of characteristics. CO_2 miscibility reduces the oil viscosity and allows much more efficient displacement by water. Usually, CO_2 is injected via the WAG process in alternating slugs of CO_2 and water. Not only does CO_2 create miscible flow, but it also can displace oil by gravity segregation between the CO_2, gas, and oil. This process may allow sequestration of large volumes of the CO_2 greenhouse gas in the many applicable reservoirs in the planning area and recover the last possible oil reserves. Sequestration of CO_2 is advocated as a method to remove the gas from the earth's atmosphere by storing the gas for geologic time. Other structures within the planning area that do not contain oil also could be applicable for sequestration.

Gas Storage

Pipeline-quality gas can be stored in good quality reservoirs with excellent sealing parameters. This gas is pumped into the reservoir during nonpeak, usually lower-priced time periods, and then pumped out into the transmission lines at times of peak demand and good prices. The differential in price pays the governmental storage fees for the use of the reservoir and the injection/compression costs required to store and retrieve the gas. The differential also serves as a buffer for cold periods when demand is high and levels out the summer slack period of production. Currently, there are no active gas storage reservoirs within the planning area.

Plugging and Abandonment of Wells

The purpose of plugging and abandoning a well is to prevent fluid migration between zones, to protect minerals from damage, and to restore the surface area. Each well has to be handled individually due to a combination of factors, including geology, subsurface well design, and specific rehabilitation concerns;

therefore, only minimum requirements can be established, and these must be modified for individual wells.

The first step in the plugging process is the filing of the Notice of Intent to Abandon. Both the surface management agency and the BLM petroleum engineer will review this notice. The notice must be filed and approved prior to plugging a past producing well. Verbal plugging instructions can be given for plugging current drilling operations, but a notice must be filed after the work is completed. If usable fresh water was encountered while the well was being drilled, the surface management agency may be allowed, if interested, to assume future responsibility for the well and the operator will be reimbursed for the attendant costs. This assumption of responsibility becomes effective after the deeper zones are plugged back to the usable water zone. Usually, the operator is more than satisfied to remove the surface reclamation liability and will not charge for the remaining well equipment.

The operator's plan for securing the hole is then reviewed. The minimum requirements, as stated in Onshore Order No. 2, are as follows: In open hole situations, cement plugs must extend at least 50 feet above and below zones that have fluid with the potential to migrate, zones of lost circulation (this type of zone may require an alternate method to isolate it), and zones of potentially valuable minerals. Thick zones may be isolated using cement plugs across the top and bottom of the zone. In the absence of productive zones and minerals, long sections of open hole may be plugged with cement plugs placed every 3,000 feet. In cased holes, cement plugs must be placed opposite perforations and extend 50 feet above and below, except where limited by plug back depth. The length of the plug is 100 feet plus 10 percent per 1,000 feet (i.e., at 10,000 feet, the plug will be 200-feet long).

Cement plugs could be replaced with a cement retainer if the retainer is set 50 feet above the open perforations and the perforations are squeezed with cement. A bridge plug also may be used to isolate a producing zone and must be capped, if placed through tubing, with a minimum of 50 feet of cement. If the cap is placed using a dump bailer, a minimum of 35 feet of cement is required. A dump bailer is an apparatus run on wire line to convey the cement to the bottom of the hole. In the event that the casing has been cut and recovered, a plug is placed 50 feet within the casing stub, and the 100 feet plus 10 percent per 1,000 feet rule is used for the space above the cutoff point. In all cases, a plug is set at the bottom of the surface casing that has a volume of cement using the 100 feet plus 10 percent per 1,000 feet rule. This may require perforating the casing and circulating or squeezing cement behind the production casing if that casing is not removed. Annular space at the surface will be plugged with 50 feet of cement using small-diameter tubing or by perforating and circulating cement.

If the integrity of a plug is questionable or the position is extremely vital, it can be tested with pressure or by tagging the plug with the tubing or drill string. Tagging the plug involves running pipe into the hole until the plug is encountered and placing a specified amount of weight on the plug to verify its placement and competency. The surface plug within the casing must be a minimum of 50 feet. The interval between plugs must be filled with mud that will balance the subsurface pressures; if this balance point is unknown, a minimum of 9 pounds per gallon is specified. After the casing has been cut off below the ground level, any void at the top of the casing must be filled with cement. If a metal plate is welded over the top of the casing, a weep hole is placed in the plate. A permanent abandonment marker is required on all wells unless otherwise requested by the surface management agency. This marker pipe is usually at least 4 inches in diameter, 10-feet long, 4 feet above ground, and embedded in cement. The pipe must be capped with the well identity and location permanently inscribed.

The surface management agency is responsible for establishing and approving methods for surface rehabilitation and determining when this rehabilitation has been satisfactorily accomplished. With satisfactorily rehabilitation, a Final Report of Abandonment is approved, and the well bond released. As of March 7, 2005, 8,073 wells, of which 5,293 are federal wells, had been plugged and abandoned in the planning area.

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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX E

Biological Resources Support Document

Appendix E
Biological Resources Support Document

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Acronyms and Abbreviations

°F	degrees Fahrenheit
ATV	all-terrain vehicle
BLM	Bureau of Land Management
cfs	cubic feet per second
CWD	Chronic Wasting Disease
EHD	Epizootic Hemorrhagic Disease
NSS	Native Species Status
RMP	Resource Management Plan
ROW	rights-of-way
SSS	Special Status Species
WGFD	Wyoming Game and Fish Department

Appendix E
Biological Resources Support Document

This appendix contains information on Vegetation, Fish and Wildlife Resources – Fish, Fish and Wildlife Resources – Wildlife, Special Status Species (SSS) – Fish, SSS – Wildlife, and SSS – Plants. The information in this appendix was used to support the Affected Environment (Chapter 3) and Environmental Consequences (Chapter 4) for Biological Resources.

The Wyoming Game and Fish Department (WGFD) provided much of the information in this appendix and as such, the content has not been altered for this Draft Resource Management Plan (RMP)/Environmental Impact Statement (EIS). The opinions and statements included in this appendix may not agree with or represent the opinion or policy of the Bureau of Land Management (BLM). In addition, the information provided by the WGFD has not undergone a complete technical edit and review. References cited within the WGFD tables are not included as part of this Draft RMP/EIS.

E1.1. User's Guide to Common and Scientific Names of Plant and Animal Species Identified in the Environmental Impact Statement

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement

Common Name	Scientific Name
Plants	
Alfalfa	*Medicago sativa*
Alkali sacaton	*Sporobolus airoides*
American vetch	*Vicia sativa*
Antelope bitterbrush	*Purshia tridentata*
Arrow-grass	*Triglochin maritime*
Arrowhead	*Sagittaria* spp.
Aster	*Aster* spp.
Astragalus	*Astragalus* spp.
Balsamroot	*Balsamorhiza sagittata*
Baltic rush	*Juncus balticus*
Basin big sagebrush	*Artemisia tridentata*
Basin wildrye	*Leymus cinereus*
Big bluegrass (Sandberg's bluegrass)	*Poa secunda*
Big sagebrush	*Artemisia. tridentata*
Birdfoot sagebrush	*Artemisia pedatifida*
Biscuit-root	*Lomatium* spp.
Bitterbrush	*Purshia* spp.
Black henbane	*Hyoscyamus niger*
Black sagebrush	*Artemisia nova*
Blowout penstemon	*Penstemon haydenii*
Blue grama	*Bouteloua gracilis*
Bluebell	*Hyacinthoides* spp.
Bluebunch wheatgrass	*Agropyron spicatum*
Bluegrass	*Poa* spp.
Bottlebrush squirreltail	*Elymus elymoides*
Broom snakeweed	*Gutierrezia sarothrae*

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement (Continued)

Common Name	Scientific Name
Plants (Continued)	
Buckwheat	*Polygonaceae* spp.
Bud sage	*Artemisia spinescens*
Bull thistle	*Cirsium vulgare*
Bulrush	*Schoenoplectus* spp.
Canada thistle	*Cirsium arvense*
Cattail	*Typha* spp.
cheatgrass	*Bromus tectorum*
Chicory	*Cichorium intybus*
Chokecherry	*Prunus virginiana*
Clover	*Trifolium* spp.
Colombia needlegrass	*Stipa columbiana*
Colorado butterfly plant	*Gaura neomexicana* ssp. *coloradensis*
Columbine	*Aquilegia* spp.
Common burdock	*Arctium minus (Hill) Bernh.*
Common crupina	*Crupina vulgaris*
Common mullein	*Verbascum thapsus*
Common reed	*Phragmites australis*
Common St. Johnswort	*Hypericum perforatum*
Common tansy	*Tanacetum vulgare*
Cottonwood	*Populus* spp.
Curl-leaf mountain mahogany	*Cercocarpus ledifolius*
Curlycup gumweed	*Grindelia squarrosa*
Currant	*Ribes* spp.
Dalmation toadflax	*Linaria genistifolia* ssp. *dalmatica*
Dames rocket	*Hesperis matronalis*
Dandelion	*Taraxacum officinale*
Diffuse knapweed	*Centaurea diffusa*
Dock species	*Rumex* spp.
Douglas fir	*Pseudotsuga menziesii*
Douglas rabbitbrush	*Chrysothamnus viscidiflorus*
Dwarf mistletoe	*Arceuthobium pusillum*
Dyer's woad	*Isatis tinctoria*
Elk sedge	*Carex geyeri*
Field bindweed	*Convolvulus arvensis*
Fringed sagewort	*Artemisia frigida*
Gardner saltbush	*Atriplex garnderi*
Globemallow	*Sphaeralcea* spp.
Goatsrue	*Galega officinalis*
Goldenweed	*Pyrrocoma* spp.
Gorse	*Ulex europaeus*
Greasewood	*Sarcobatus vermiculatus*
Green needlegrass	*Stipa viridula*
Halogeton	*Halogeton glomeratus*
Hoary cress (whitetop)	*(Cardaria draba and Cardaria pubescens Desv.)*
Hood's phlox	*Phlox hoodsii*
Hooker sandwort	*Arenaria hookeri*
Horsetail	*Equisetum arvense*

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement (Continued)

Common Name	Scientific Name
Plants (Continued)	
Houndstongue	*Cynoglossum offinale*
Iberian starthistle	*Centaurea iberica*
Idaho fescue	*Festuca idahoensis*
Indian paintbrush	*Castilleja* spp.
Indian ricegrass	*Oryzopsis hynenoides*
Inland saltgrass	*Distichlis spicata*
Iris	*Iris* spp.
Italian thistle	*Carduus pycnocephalus*
Japanese brome	*Bromus japonicus*
Jointed goatgrass	*Aegilops cylindrica*
Juniper	*Juniperus* spp.
Kentucky bluegrass	*Poa pratensis*
King spike fescue	*Leucopoa kingii*
Knapweed	*Centaurea* spp.
Laramie columbine	*Aquilegia laramiensis*
Laramie false sagebrush	*Sphaeromeria simplex*
Larkspur	*Delphinium occidentale*
Leafy spurge	*Euphorbia esula*
Limber pine	*Pinus flexilis*
Little bluestem	*Schizachyrium scoparius*
Locoweed	*Astragalus* spp.
Lodgepole pine	*Pinus contorta*
Lupine	*Lupinis* spp.
Many-stemmed spider flower	*Cleome multicaulis*
Meadow knapweed	*Centaurea pratensis*
Medusahead	*Taeniatherum caput-medusae*
Milkvetch	*Astragalus* spp.
Mountain big sagebrush	*Artemisia tridentate var. vaseyana*
Mountain mahogany	*Cercocarpus montanus*
Mountain pea	*Thermopsis montana*
Musk thistle	*Carduus nutans*
Mutton bluegrass	*Poa fendleriana*
Needle-and-thread	*Stipa comata*
Nelson's milkvetch	*Astragalus nelsonianus*
Orange hawkweed	*Hieracium aurantiacum*
Orchard grass	*Dactylis glomerata*
Oregon grape	*Mahonia aquifolium*
Ox-eye daisy	*Chrysanthemum leucanthemum.*
Penstemon	*Penstemon* spp.
Perennial pepperweed (giant whitetop)	*Lepidium latifolium*
Perennial sowthistle	*Sonchus arvensis*
Phlox	*Phlox* spp.
Phragmites	*Phragmites australis*
Plumeless thistle	*Carduus acanthoides*
Ponderosa pine	*Pinus ponderosa*
Porter's sagebrush	*Artemisia porteri*
Poverty-weed	*Iva axillaris*

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement (Continued)

Common Name	Scientific Name
Plants (Continued)	
Prairie clover	*Petalostemon purpureus*
Prairie junegrass	*Koeleria macrantha*
Prairie sandreed	*Calamorifa longifolia*
Prickly pear cactus	*Opuntia* spp.
Puncturevine	*Tribulus terrestris*
Purple loosestrife	*Lythrum salicaria*
Purple starthistle	*Centaurea calcitrapa*
Quackgrass	*Agropyron repens*
Quaking aspen	*Populus tremuloides*
Redtop	*Agrostis stolonifera.*
Rocky Mountain juniper	*Juniperus scopulorum*
Rocky Mountain maple	*Acer glabrum*
Rubber rabbitbrush	*Ericameria nauseosa*
Rush skeleton weed	*Chondrilla juncea*
Russian knapweed	*Centaurea repens*
Russian thistle	*Salsola kali*
Russian wildrye	*Psathyrostachys junceus*
Sagebrush	*Artemisia* spp.
Salt cedar (tamarisk)	*Tamarix gallica*
Saltbush	*Atriplex* spp.
Saltgrass	*Distichlis spicata*
Sand dropseed	*Sporbolus cryptandrus*
Sand sagebrush	*Artemisia filifolia*
Sandberg's bluegrass (big bluegrass)	*Poa secunda*
Sandbur	*Cenchrus incertus*
Sandwort	*Arenaria* spp.
Scentless chamomile	*Matricaria perforate*
Scotch broom	*Cytisus scoparius*
Scotch thistle	*Onopordum acanthium*
Scurfpea	*Psoralea tenuiflora*
Sea blight	*Suaeda maritime*
Sedge species	*Carex* spp.
Sericea lespedeza	*Lespedeza cuneata*
Serviceberry	*Amerlanchier alnifolia*
Shadscale saltbush	*Atriplex confertifolia*
Showy milkweed	*Asclepias speciosa*
Silver sagebrush	*Artemisia canescens*
Skeletonleaf bursage	*Franseria discolor Nutt.*
Small burnett	*Sanguisorba minor*
Snowberry	*Symphoricarpos* spp.
Spiny hopsage	*Grayia spinosa*
Spotted knapweed	*Centaurea maculosa*
Squarrose knapweed	*Centaurea virgata* var. *squarrosa*
St. Johnswort	*Hypericum* spp.
Streambank wheatgrass	*Elymus lanceolatus*
Subalpine fir	*Abies lasiocarpa*
Sulphur cinquefoil	*Potentilla recta*

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement (Continued)

Common Name	Scientific Name
Plants (Continued)	
Syrian beancaper	*Zygophyllum fabago*
Tansy	*Tanacetum vulgare*
Tansy ragwort	*Senecio jacobaea*
Teasel	*Dipsacus* spp.
Threadleaf sedge	*Carex filifolia*
Threeawn	*Aristida beyrichiana*
Threetip sagebrush	*Artemisia tripartite*
Utah juniper	*Juniperus osteosperma*
Ute ladies'-tresses	*Spiranthes diluvialis*
Verbena	*Verbena bracteata*
Violet	*Viola* spp.
Western prairie fringed orchid	*Platanthera praeclara*
Western wheatgrass	*Pascopyrum smithii*
Wild licorice	*Glycyrrhiaz lepidota*
Wild onion	*Allium acuminatum*
William's wafer-parsnip	*Cymopterus williamsii*
Willow	*Salix* spp.
Winterfat	*Krascheninnikovia lanata*
Wood's rose	*Rosa woodsii*
Woody aster	*Xylorrhiza glabriuscula*
Wyoming big sagebrush	*Artemisia tridentata* var. *wyomingensis*
Wyoming threetip sagebrush	*Artemisia tripartite* ssp. *rupicola*
Yarrow	*Achillea millefolium*
Yellow hawkweed	*Hieracium pratense*
Yellow toadflax	*Linaria vulgaris*
Fungi	
Blitser rust	*Cronartium ribicola*
Fish	
Gizzard shad	*Dorosoma cepedianum*
Central stoneroller	*Campostoma anomalum*
Goldfish	*Carassius auratus*
Lake chub	*Couesius plumbeus*
Grass carp	*Ctenopharygodon idella*
Red shiner	*Cyprinella lutrensis*
Common carp	*Cyprinus carpio*
Western silvery minnow	*Hybognathus argyritis*
Brassy minnow	*Hybognathus hankinsoni*
Plains minnow	*Hybognathus placitus*
Common shiner	*Luxilus cornutus*
Hornyhead chub	*Nocomis biguttatus*
Golden shiner	*Notemigonus crysoleucas*
Emerald shiner	*Notropis atherinoides*
Bigmouth shiner	*Notropis dorsalis*
Spottail shiner	*Notropis hudsonius*
Sand shiner	*Notropis stramineus*
Suckermouth minnow	*Phenacobius mirabilis*
Fathead minnow	*Pimephales promelas*

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement (Continued)

Common Name	Scientific Name
Fish (Continued)	
Flathead chub	*Platygobio gracilis*
Longnose dace	*Rhinichthys cataractae*
Creek cub	*Semotilus atromaculatus*
River carpsucker	*Carpiodes carpio*
Quillback	*Carpiodes cyprinus*
Longnose sucker	*Catostomus catostomus*
White sucker	*Catostomus commersoni*
Mountain sucker	*Catostomus platyrhynchus*
Shorthead redhorse	*Moxostoma macrolepidotum*
Black bullhead	*Ameirus melas*
Channel catfish	*Ictalurus punctatus*
Flathead catfish	*Pylodictis olivaris*
Stonecat	*Noturus flavus*
Rainbow trout	*Oncorhynchus mykiss*
Brown trout	*Salmo trutta*
Brook trout	*Salvelinus fontinalis*
Cutthroat trout	*Oncorhynchus clarki*
Plains topminnow	*Fundulus sciadicus*
Plains killifish	*Fundulus zebrinus*
Rock Bass	*Ambloplites rupestris*
Green sunfish	*Lepomus cyanellus*
Bluegill	*Lepomus macrochirus*
Smallmouth bass	*Micropterus dolomieu*
Largemouth bass	*Micropterus salmoides*
White crappie	*Pomoxis annularis*
Black crappie	*Pomoxis nigromaculatus*
Iowa darter	*Etheostoma exile*
Johnny darter	*Etheostoma nigrum*
Yellow perch	*Perca flavescens*
Walleye	*Sander vitreus*
Tiger musky	hybrid
Freshwater drum	*Aplodinotus grunniens*
Pallid Sturgeon*	*Scaphirhynchus albus*
Wildlife	
American marten	*Martes americana*
American tree sparrow	*Spizella arborea*
American white pelican	*Pelecanus erythrorhynchos*
Badger	*Taxidea taxus*
Baird's sparrow	*Ammodramus bairdii*
Bald eagle	*Haliaeetus leucocephalus*
Barrow's goldeneye	*Bucephala islandica*
Beaver	*Castor canadensisis*
Big brown bat	*Eptesicus fuscus*
Bighorn sheep	*Ovis canadensis*
Bison	*Bison bison*
Black bear	*Ursus americanus*
Black tern	*Chlidonias niger*

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement (Continued)

Common Name	Scientific Name
Wildlife (Continued)	
Black-billed magpie	*Pica pica*
Black-crowned night heron	*Nycticorax nycticorax*
Black-footed ferret	*Mustela nigripes*
Black-tailed prairie dog	*Cynomys ludovicianus*
Blue grouse	*Dendragapus obscurus*
Bobcat	*Lynx rufus*
Brewer's sparrow	*Spizella breweri*
Brown creeper	*Certhia americana*
Brown thrasher	*Toxostoma rufum*
Brown-headed cowbird	*Molothrus ater*
Bufflehead	*Bucephala albeola*
Burrowing owl	*Speotyto cunicularia*
Calliope hummingbird	*Stellula calliope*
Canvasback	*Aythya valisineria*
Caspian tern	*Sterna caspia*
Chukar partridge	*Alectoris chukar*
Common merganser	*Mergus merganser*
Cottontail rabbit	*Sylvilagus spp.*
Coyote	*Canis latrans*
Eastern pipistrelle	*Pipistrellus subflavus*
Eastern red bat	*Lasiurus borealis*
Elk	*Cervus elaphus*
Eskimo curlew	*Numenius borealis*
Ferruginous hawk	*Buteo regalis*
Forster's tern	*Sterna forsteri*
Fox squirrel	*Sciurus niger*
Franklin's gull	*Larus pipixcan*
Fringed myotis	*Myotis thysanodes*
Golden eagle	*Aquila chrysaetos*
Goldeneye	*Bucephala clangula*
Grasshopper sparrow	*Ammodramus savannarum*
Gray squirrel	*Sciurus carolinensis*
Gray wolf	*Canis lupus*
Greater sage-grouse	*Centrocercus urophasianus*
Hispid pocket mouse	*Chaetodipus hispidus*
Hoary bat	*Lasiurus cinereus*
Hungarian partridge	*Perdix perdix*
Interior least tern	*Sterna antillarum athalassos*
Jackrabbit	*Lepus* spp.
Lesser scaup	*Aythya affinis*
Lewis' woodpecker	*Melanerpes lewis*
Little brown myotis	*Myotis lucifugus*
Loggerhead shrike	*Lanius ludovicianus*
Long-billed curlew	*Numenius americanus*
Long-eared myotis	*Myotis evotis*
Long-legged myotis	*Myotis volans*
MacGillivray's warbler	*Oporornis tolmiei*

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement (Continued)

Common Name	Scientific Name
Wildlife (Continued)	
Mallard	*Anas platyrhynchos*
Marmot	*Marmota* spp.
Merlin	*Falco columbarius*
Mink	*Mustela vison*
Mormon cricket	*Anabrus simplex*
Mountain lion	*Puma concolor*
Mountain plover	*Charadrius montanus*
Mourning dove	*Zenaida macroura*
Mule deer	*Odocoileus hermionus*
Muskrat	*Ondata zibethicus*
Northern goshawk	*Accipiter gentilis*
Northern harrier	*Circus cyaneus*
Northern leopard frog	*Rana pipiens*
Northern pintail	*Anas acuta*
Olive-backed pocket mouse	*Perognathus fasciatus*
Pallid bat	*Antrozous pallidus*
Peregrine falcon	*Falco peregrinus*
Piping plover	*Charadrius melodus*
Plains harvest mouse	*Reithrodontomys montanus*
Plains pocket gopher	*Geomys bursarius*
Porcupine	*Erethizon dorsatum*
Prairie falcon	*Falco mexicanus*
Prairie rattlesnake	*Crotalus viridis*
Prairie vole	*Microtus ochrogaster*
Preble's meadow jumping mouse	*Zapus hudsonius preblei*
Pronghorn	*Antilocapra americana*
Raccoon	*Procyon lotor*
Red squirrel	*Tamiasciurus hudsonicus*
Red wolf	*Canis rufus*
Redhead	*Aythya americana*
Red-naped sapsucker	*Sphyrapicus nuchalis*
Ring-necked pheasant	*Phasianus colchicus*
Rough-legged hawk	*Buteo lagopus*
Ruffed grouse	*Bonasa umbellus*
Sage sparrow	*Amphispiza belli*
Sage thrasher	*Oreoscoptes montanus*
Sagebrush lizard	*Sceloporus graciosus*
Sagebrush vole	*Lemmiscus curtatus*
Sandhill crane	*Grus canadensis*
Savannah sparrow	*Passerculus sandwichensis*
Sharp-tailed grouse	*Tympananuchus phasianellus*
Silky pocket mouse	*Perognathus flavus*
Silver-haired bat	*Lasionycteris noctivagans*
Snow bunting	*Plectrophenax nivalis*
Snowshoe hare	*Lepus americanus*
Snowy egret	*Egretta thula*
Snowy owl	*Bubo scandiacus*

Table E-1. Common and Scientific Names of Plant and Wildlife Species Identified in the Environmental Impact Statement (Continued)

Common Name	Scientific Name
Wildlife (Continued)	
Spotted bat	*Euderma maculatum*
Spotted skunk	*Spilogale gracilis*
Striped skunk	*Mephitis mephitis*
Swainson's hawk	*Buteo swainsoni*
Swift fox	*Vulpes velox*
Teal duck	*Anas* spp.
Towhee	*Pipilo* spp.
Townsend's big-eared bat	*Corynorhinus townsendii*
Townsend's warbler	*Dendroica townsendi*
Trumpeter swan	*Cygnus buccinator*
Warbling vireo	*Vireo gilrus*
Weasel	*Mustela* spp.
Western small-footed myotis	*Myotis ciliolabrum*
White-faced ibis	*Plegadis chihi*
White-tailed deer	*Odocoileus virginianus*
White-tailed prairie dog	*Cynomys leucurus*
Whooping crane	*Grus americana*
Wild turkey	*Meleagris gallopavo*
Williamson's sapsucker	*Sphyrapicus thyroideus*
Willow flycatcher	*Empidonas traillii*
Yellow-billed cuckoo	*Coccyzum americanus*
Invertebrates	
Ips beetle	*Ips* spp.
Mountain pine beetle	*Dendroctonus ponderosae*

* The pallid sturgeon is not located in the planning area but is discussed in the EIS as a federally endangered species downstream of the planning area.

E1.2. Fish and Wildlife Resources – Fish

The WGFD estimated and categorized the miles of stream by class, acres of standing water, and land status (approximate) identified in the following basin table (Table E-2). A further breakdown of the public land status category to land administered by the BLM was not available at the time this Draft RMP/EIS was printed.

Table E-2 lists fish species collected in major drainages of the Casper Fisheries Management Region (WGFD 2005a). Stream classifications reflect the coldwater production capacity of a stream, in pounds of trout per mile. Stream classes are as follows: Blue equals greater than 600 pounds of trout per mile; Red equals 300 to 600 pounds of trout per mile; Yellow equals 50 to 300 pounds of trout per mile; Green equals less than 50 pounds of trout per mile; Orange equals warm and cool water game fish; and "No sport fish" equals no game fish sampled, but may contain other endemic species. Acres of standing water reflect only waters suitable for fish, and are based on the area of water at full pool. Land status is listed as private or public; lands listed as public are owned by state or federal agencies. The WGFD's Strategic Habitat Plan for the Casper Region identified habitat challenges (WGFD 2001). Species listed in bold text are a management priority as a sport fish species. Native Species Status (NSS) 1 to 3 are species that may be rare to common, with declining or vulnerable habitat.

The information in Table E-2, provided by the WGFD, may include opinions and statements that may not agree with or represent the opinions or policies of the BLM.

Table E-2. Fish Species, Water Classification, and Habitat Challenges for Aquatic Basins Within the Casper Fisheries Management Region

Basin:	**1PA – North Platte River, Pathfinder Dam to Alcova Dam**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Rainbow trout, walleye, cutthroat trout, brown trout**, common carp, white sucker, longnose sucker, Iowa darter, longnose dace, bigmouth shiner, emerald shiner, fathead minnow, **green sunfish**, Johnny darter, *lake chub*, sand shiner, spottail shiner.		
Miles of Stream by Class:	Yellow = 4.2	Acres of Standing Water:	2,340
Land Status (approximate)	Public = 69 percent Private =31 percent		
Habitat Challenges:	Flow management and sediment entrainment from eroding banks and upland sources are perceived as bottlenecks that limit salmonid spawning habitat potential, aquatic macro-invertebrate productivity, and perhaps juvenile survival.		
Basin:	**1AD – North Platte River, Alcova Dam to Dave Johnston Power Plant Dam**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Rainbow trout, cutthroat trout, brown trout, walleye**, common carp, white sucker, longnose sucker, longnose dace, emerald shiner, *lake chub*, creek chub, *flathead chub*, shorthead redhorse, red shiner, bigmouth shiner, sand shiner, central stoneroller, Johnny darter, Iowa darter, fathead minnow, brassy minnow, ***black bullhead*, channel catfish**, spottail shiner, brook stickleback.		
Miles of Stream by Class:	Blue = 86.8, Yellow = 1.6	Acres of Standing Water:	204
Land Status (approximate)	Public = 19 percent Private = 81 percent		
Habitat Challenges:	Flow management and sediment entrainment from eroding banks and upland sources are perceived as bottlenecks that limit salmonid spawning habitat potential, aquatic macro-invertebrate productivity, and perhaps juvenile survival.		
Basin:	**1DG – Dave Johnston Power Plant to Glendo Dam**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Walleye, yellow perch, black crappie, white crappie, green sunfish, rainbow trout, largemouth bass**, common carp, gizzard shad, emerald shiner, golden shiner, spottail shiner, *common shiner,* red shiner, bigmouth shiner, sand shiner, **channel catfish, flathead catfish, stonecat, *black bullhead***, white sucker, longnose sucker, shorthead redhorse, river carpsucker, fathead minnow, brassy minnow, creek chub, *lake chub*, *flathead chub*, quillback, Johnny darter, Iowa darter, central stoneroller.		
Miles of Stream by Class:	Orange = 61	Acres of Standing Water:	12,365
Land Status (approximate)	Public = 20 percent Private = 80 percent		
Habitat Challenges:	Flow management and sediment entrainment from eroding banks and upland sources are perceived as bottlenecks that limit spawning habitat potential, aquatic macro-invertebrate productivity, and perhaps juvenile survival. The PP&L Dam below Glenrock (at Dave Johnston Power Plant) is a barrier to upstream fish movement. The fauna is more diverse below the barrier than above. However, the barrier maybe desirable from the standpoint of isolating the cool-water assemblage, which is predominate below the barrier, from the cold-water assemblage, which is predominate above the barrier.		
Basin:	**1GG – North Platte River, Glendo Dam to Guernsey Dam**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Brown trout, cutthroat trout, rainbow trout, walleye, largemouth bass, yellow perch**, common carp, **channel catfish, black crappie, green sunfish**, emerald shiner, spottail shiner, gizzard shad, longnose sucker, white sucker, fathead minnow, quillback, longnose dace.		
Miles of Stream by Class:	Green = 20, Orange = 3.5	Acres of Standing Water:	2,377
Land Status (approximate)	Public = 37 percent Private = 63 percent		
Habitat Challenges:	The sport fishery potential and endemic aquatic species assemblage below Glendo Dam are limited by fluctuating water flows. A low flow of 25 cfs occurs below Glendo Dam during the nonirrigation season, which provides limited instream habitat for a sport fishery and endemic aquatic species. The current operational regime at Guernsey Reservoir, which includes a mean annual reservoir drawdown of 97 percent to accommodate the silt run, precludes any fisheries development.		

Table E-2. Fish Species, Water Classification, and Habitat Challenges for Aquatic Basins Within the Casper Fisheries Management Region (Continued)

Basin:	**1GN – North Platte River, Guernsey Dam to Nebraska State Line**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	***Black bullhead*, bluegill**, brassy minnow, bigmouth shiner, **brown trout, channel catfish**, creek chub, common carp, *common shiner*, emerald shiner, fathead minnow, *flathead chub*, **flathead catfish, green sunfish,** gizzard shad, Johnny darter, **largemouth bass**, longnose dace, longnose sucker, shorthead redhorse, quillback, **rainbow trout**, river carpsucker, red shiner, sand shiner, central stoneroller, **walleye**, white sucker, **yellow perch**.		
Miles of Stream by Class:	Orange = 60	Acres of Standing Water:	Not identified
Land Status (approximate)	Public = 10 percent Private = 90 percent		
Habitat Challenges:	No flows are released below Guernsey during the nonirrigation season, which results in about 21 miles of dewatered river over the winter. Fish are restricted to deeper pools where they can over-winter during the no flow period. The Laramie River provides flow to the North Platte River during the non-irrigation season from its confluence with the North Platte River to the Nebraska border. However, most of the channel from Guernsey Dam to Nebraska has a shifting sand bottom, which is poor habitat for a salmonid fishery, but may be suitable for endemic fishes.		
Basin:	**1PS – Pine Ridge to Sweetwater River – North Bank Tributaries to North Platte River**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Brown trout, rainbow trout, brook trout, *black bullhead*, black crappie, channel catfish**, common carp, emerald shiner, **green sunfish, largemouth bass, cutthroat trout, walleye, white crappie**, white sucker, brassy minnow, creek chub, fathead minnow, golden shiner, gizzard shad, Iowa darter, Johnny darter, longnose sucker, grass carp, bigmouth shiner, longnose dace, plains killifish, sand shiner, brook stickleback, central stoneroller, *lake chub*.		
Miles of Stream by Class:	Orange = 152, Green = 120, No sport fish = 44	Acres of Standing Water:	1,329
Land Status (approximate)	Public = 50 percent Private = 50 percent		
Habitat Challenges:	The basin along the north side of the North Platte River between the Sweetwater River and Pine Ridge are relatively dry and sparsely vegetated. Most streams are ephemeral or intermittent, although some perennial streams exist, and many stream channels are degraded or actively degrading. Few contain trout and for those with trout, abundance is low. Most riparian communities, particularly wet meadow habitats have degraded significantly as a result of hummocking and headcutting. Most of the degradation can be attributed to livestock grazing. Numerous small reservoirs are managed for fisheries. Many of these reservoirs are dewatered from evaporation and livestock watering, but could support sport fisheries during wet years. Most reservoirs have not been maintained and have lost storage capacity through sedimentation and erosion of or leaching through the dike. The management objective for most small streams is to maintain the resident (endemic) aquatic species assemblages while providing fishing opportunities within suitable reservoir complexes.		
Basin:	**1PN – Pine Ridge to Nebraska State Line – North Bank Tributaries to North Platte River**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Bluegill**, fathead minnow, **largemouth bass**, common carp, **walleye, channel catfish, rainbow trout, yellow perch**, grass carp, **pumpkinseed sunfish**, white sucker, **brook trout, brown trout**, goldfish, longnose dace, creek chub, brassy minnow, longnose sucker, plains killifish, **rock bass**, sand shiner, central stoneroller, **green sunfish**, red shiner.		
Miles of Stream by Class:	Orange = 56, Green = 90	Acres of Standing Water:	168
Land Status (approximate)	Public = 11 percent Private = 89 percent		
Habitat Challenges:	The collection basins on the north side of the North Platte River support small intermittent to perennial prairie streams with low base flows. They flow through low gradient sandy and clay soils, which support habitats suited to non-game aquatic species. Arid conditions, warm temperatures, and the physical characteristics of the prairie stream channels limit the potential for sport fisheries. Some drainages contribute high sediment loads to segments of the North Platte River. Contributing factors include: prolonged and intense annual herbivory, adjustment of the base elevation of the North Platte River due to flow regulation, increased drainage density associated with roads and trails, improperly engineered stream crossings, and reduced hydrologic function in upland habitats due to successional progression. Because these streams offer very little fishing opportunity, protecting the endemic aquatic species assemblage is the main goal.		

Table E-2. Fish Species, Water Classification, and Habitat Challenges for Aquatic Basins Within the Casper Fisheries Management Region (Continued)

Basin:	**1NI – Niobrara Drainage**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Rainbow trout**, brassy minnow, **brown trout**, creek chub, fathead minnow, *finescale dace*, green sunfish, Iowa darter, longnose dace, *pearl dace*, *plains topminnow*, sand shiner, central stoneroller, white sucker.		
Miles of Stream by Class:	Orange = 47	Acres of Standing Water:	5
Land Status (approximate)	Public = 5 percent Private = 95 percent		
Habitat Challenges:	The collection basins on the Niobrara River headwaters support small ephemeral and intermittent prairie streams that congregate to generate four miles of perennial stream flow in the Niobrara River and Van Tassel Creek. Land use conflicts, arid conditions, warm temperatures, and the physical characteristics of the prairie stream channels limit the potential for sport fisheries. Protecting habitat for endemic species is important, as several species are rare or not found in other drainages of the State.		
Basin:	**1LR – North Slope of Laramie Range (Garden Creek to Cottonwood Creek)**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Channel catfish, rainbow trout, brook trout, brown trout, cutthroat trout**, common carp, fathead minnow, **green sunfish**, Iowa darter, white sucker, **walleye, largemouth bass, bluegill**, red shiner, ***black bullhead*, black crappie**, creek chub, longnose dace, plains killifish, sand shiner, *common shiner*, central stoneroller, bigmouth shiner, longnose sucker, **stonecat**, *plains topminnow*.		
Miles of Stream by Class:	Red = 64, Yellow = 215, Green = 373, Orange = 58, No sport fish = 7.6	Acres of Standing Water:	797
Land Status (approximate)	Public = 27 percent Private = 73 percent		
Habitat Challenges:	Flashy hydrologic processes attributed to the granitic geology and a preponderance of successionally advanced or altered vegetation communities scour stream channels during high flows leaving wide channels. Low summer, fall, and winter flows limit instream habitat availability. Wide shallow channels and warm irrigation return flows result in unfavorable conditions for trout. Prolonged and intense livestock grazing has accelerated bank erosion impairing riparian function along vegetatively controlled channel types. Logging has also contributed to sediment loading in the basin.		
Basin:	**1SS – South Fork Powder River and Salt Creek Drainages**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Bluegill, largemouth bass, brook trout, rainbow trout, cutthroat trout**, fathead minnow, white sucker, **channel catfish**, common carp, goldfish, **green sunfish, black crappie**, golden shiner, *flathead chub*, longnose dace, plains killifish, sand shiner, ***black bullhead***, *plains minnow*.		
Miles of Stream by Class:	Yellow = 23, Orange = 159, No sport fish = 55	Acres of Standing Water:	243
Land Status (approximate)	Public = 50 percent Private = 50 percent		
Habitat Challenges:	The South Fork Powder River and Salt Creek basins are dry and sparsely vegetated. Most streams are ephemeral or intermittent, although some perennial streams exist. Many stream channels are degraded or actively degrading. Most riparian communities, particularly wet meadow habitats, have degraded as a result of hummocking and headcutting. Numerous small reservoirs exist that are accessible to the public and managed for fisheries. Many of these reservoirs are dewatered from evaporation and livestock watering, but do support sport fisheries during wet years. Most reservoirs have not been maintained and have lost storage capacity through sedimentation and erosion of, or leaching through their dikes. The management objective for most small streams is to maintain the endemic aquatic species assemblages while providing fishing opportunities within suitable reservoir complexes.		

Table E-2. Fish Species, Water Classification, and Habitat Challenges for Aquatic Basins Within the Casper Fisheries Management Region (Continued)

Basin:	**5LR – Laramie River Drainage, Grayrocks, Dry Laramie River, Duck Creek, Marble and Lumen Creek Drainages**		
Species Present (sport fish in bold): ***(NSS1-3 in italics):***	Bigmouth shiner, **black crappie**, brassy minnow, **brook trout, brown trout, channel catfish**, creek chub, common carp, *common shiner*, fathead minnow, **freshwater drum,** gizzard shad, **green sunfish**, *hornyhead chub*, Iowa darter, Johnny darter, **largemouth bass**, longnose dace, longnose sucker, northern redhorse, plains killifish, *plains topminnow*, **pumpkinseed sunfish** quillback, **rainbow trout**, red shiner, river carpsucker, sand shiner, **smallmouth bass,** spottail shiner, **stonecat**, central stoneroller, **walleye**, white sucker, **yellow perch**.		
Miles of Stream by Class:	Red = 14, Green = 73, Orange = 10, No Sport Fish = 48	**Acres of Standing Water:**	4,304
Land Status (approximate)	Public = 10% private = 90%		
Habitat Challenges:	The tailwater river channel below Grayrocks Reservoir has been impacted by hydrologic changes (e.g. down-cutting of the river channel and a loss of the number of channels) that may be less favorable to native nongame fishes. Cooler water temperatures, seasonally low dissolved oxygen, and channel changes also appear to have negatively impacted warmwater sportfish. Dewatering, sediment supply from return flows and sediment flushes from water management systems are widespread impacts. Diversion structures, dams and culverts are possible migration barriers and habitat/population-fragmentation threats.		
	The reach of the Laramie River from the inflow of Grayrocks Reservoir to the dam that diverts water from the Laramie River to Bluegrass Creek, has had a long-term impact to the natural hydrology of the river. The Bluegrass Diversion was completed before Statehood, so river discharge and sediment supply have been altered for over 100 years. Annual water yield below the diversion was reduced and annual fluctuation s were dampened primarily by the storage or diversion of peak flows. Reductions in high flows have reduced channel scour and transport of large sediment (cobbles and larger). Operation of the diversion has resulted in release of sediment accumulated on the upstream face of the diversion dam and probably hydrogen sulfide, or other gases toxic to aquatic life, resulting in fish kills. The release of sediment and dampening of the hydrograph have resulted in accumulation of fine sediments; substrate composition appears to be largely composed of silt and boulders with little gradation between those sizes. Flushing flows apparently are rare, as vegetation (e.g. cattails, willows, alder) has invaded the accumulated fine sediment. Obligate-gravel-spawning fish may have limited spawning habitat.		
Basin:	**5CC – Chugwater Creek and Wheatland Creek Drainages**		
Species Present (sport fish in bold): ***(NSS1-3 in italics):***	Creek chub, fathead minnow, iowa darter, *plains topminnow*, white sucker, ***black bullhead***, **largemouth bass**, **brook trout, rainbow trout, green sunfish**, longnose dace, **brown trout**, longnose sucker, brassy minnow, bigmouth shiner, **channel catfish**, common carp, Johnny darter, quillback, red shiner, sand shiner, central stoneroller, *common shiner*, plains killifish, **tiger musky**, gizzard shad, **black crappie, bluegill, pumpkinseed**, spottail shiner, golden shiner.		
Miles of Stream by Class:	Yellow = 108, green = 35 No game fish = 114	**Acres of Standing Water:**	567
Land Status (approximate)	Public = 10% private = 90%		
Habitat Challenges:	Dewatering, sediment supply from return flows and sediment flushes from water management systems are widespread impacts. Diversion structures, dams and culverts are possible migration barriers and habitat/population-fragmentation threats. The mainstem Chugwater Creek has been impacted by: 1) channelization in northwestern Laramie County along the railroad right-of-way; 2) heavy grazing, 3) the natural erosive nature of the basin, and 4) flashfloods.		

Table E-2. Fish Species, Water Classification, and Habitat Challenges for Aquatic Basins Within the Casper Fisheries Management Region (Continued)

Basin:	**5NL – North Laramie River and Drainages**		
Species Present (sport fish in bold): *(NSS1 to 3 in italics):*	**Black bullhead, bluegill, brook trout**, brassy minnow, bigmouth shiner, **brown trout, channel catfish**, creek chub, common carp, *common shiner*, fathead minnow, **green sunfish**, *hornyhead chub*, iowa darter, Johnny darter, **largemouth bass**, longnose dace, plains killifish, **rainbow trout**, red shiner, sand shiner, **stonecat**, central stoneroller, white sucker.		
Miles of Stream by Class:	Yellow = 21, Green = 33, No game fish = 10	Acres of Standing Water:	34
Land Status (approximate)	Public = 5 percent Private = 95 percent		
Habitat Challenges:	The relatively dry climate of the North Laramie River basin results in small streams with little perennial flow, intermittent flow, or ephemeral streams. Irrigation water withdrawals in summer probably result in low flows and high water temperatures. Diversions, culverts, or other obstructions are possible migration barriers and habitat/population-fragmentation threats.		
Basin:	**5HC – Horse Creek and drainages**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**White crappie, black crappie**, river carpsucker, red shiner, **walleye, bluegill, stonecat, channel catfish, black bullhead, largemouth bass**, bigmouth shiner, **brown trout**, creek chub, longnose dace, sand shiner, central stoneroller, white sucker, **rainbow trout**, brassy minnow, *common shiner*, fathead minnow, plains killifish, common carp, **green sunfish**, gizzard shad, longnose sucker, shorthead redhorse, quillback, red shiner, *suckermouth minnow*, **yellow perch**.		
Miles of Stream by Class:	Green = 90, Orange = 43 No game fish = 88	Acres of Standing Water:	2,561
Land Status (approximate)	Public = 10 percent Private = 90 percent		
Habitat Challenges:	Dewatering and sedimentation are the two greatest threats to native fish populations in Horse Creek. Other potential threats include: fragmentation by diversions, culverts, or other structures; non-point source pollution, especially from sources such as livestock feedlots, competition and predation by exotic;, and hydrologic changes to parameters such as turbidity and intermittency. For some native fishes, decreases in turbidity and increased late summer flows that reduce intermittency may be a negative impact; especially if those conditions favor nonnative predators or competitors.		
Basin:	**1BH – Bates Hole**		
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	**Brook trout, rainbow trout, brown trout, cutthroat trout,** creek chub, longnose dace, **green sunfish**, grass carp.		
Miles of Stream by Class:	Red = 14, Yellow = 37, Green = 19, Orange = 73	Acres of Standing Water:	31
Land Status (approximate)	Public = 45 percent Private = 55 percent		
Habitat Challenges:	Erosion and sediment entrainment are natural processes in Bates Hole that have been accelerated by human activities. Contributing factors include, but are not limited to: prolonged or intense annual herbivory, adjustment of the base elevation of the North Platte River due to river flow regulation, increased drainage density associated with roads and trails, improperly engineered stream crossings, and reduced hydrologic function in upland habitats due to successional progression. Following reservoir construction, the base elevation of the North Platte has dropped. The tributaries are downcutting to meet the new elevation. Sedimentation issues are exacerbated by the presence of erosive soils, intense grazing, road density, poorly engineered stream crossings, and reduced hydrologic function in the uplands due to successional progression. Most soils in the lower basin were derived from soft marine shales. Varying slopes, and high silt, clay, and soluble salt content limit the potential for vegetation cover. The potential for surface erosion, gully erosion, and channel degradation is high. Channel degradation and loss of riparian function (e.g., floodplain connectivity, channel stability, and riparian bank storage) are widespread. The eastern perimeter of the basin is dominated by broad plateaus and complexes of narrow ridgelines intersected by steep drainage ways. Most of the level-to-moderately sloping soil surfaces are relatively stable with moderate vegetation canopy coverage. The greatest erosion hazard occurs from head-cutting and sediment entrainment from bank sloughing and gully widening. Stream channel degradation and loss of riparian function is less common than at lower elevations.		

Table E-2. Fish Species, Water Classification, and Habitat Challenges for Aquatic Basins Within the Casper Fisheries Management Region (Continued)

Basin:	Cheyenne River – Sheridan Crew records
Species Present (sport fish in bold) *(NSS1 to 3 in italics):*	***Black bullhead***, *flathead chub*, fathead minnow, longnose dace, plains killifish, *plains minnow*, sand shiner, river carp sucker, white sucker, **channel catfish**, mountain sucker, plains topminnow, **green sunfish**.
Habitat Challenges:	The Cheyenne River hydrograph is driven by low elevation snow accumulations, seasonal rainfall, and periodic storm events. Peak flows occur from March through May (500 to 600 cfs) with occasional flood events (23,000 cfs recorded in 1978) associated with summer storms. Lowest flows, which are probably exacerbated by irrigation withdrawals throughout the basin, occur in July and August, and again from October through November (Druse et al. 1991). Near the South Dakota State line, flows cease in the Cheyenne River during most years (Druse et al. 1991). The repeated withdrawal, warming, and return of irrigation water undoubtedly contribute to high summer temperatures that reaches 70 to 80 degrees Fahrenheit (°F) during the summer (USGS 1974) which may be detrimental to some species. Turbidity, which prevents light penetration needed for growing aquatic vegetation, channel instability, and high temperatures, probably inhibit aquatic invertebrate production (Pennak 1978) and create an environment hostile to fish species not specifically adapted to such conditions (i.e., most game fish species). Little is known of the habitat requirements, relative abundance, or spatial distribution of most indigenous fish in the Cheyenne River basin and Patton (1997) provides the most recent baseline data on species presence and distribution. There presently is no extensive baseline against which to measure population trends. Illegal introductions of green sunfish and black bullhead into waters where they become over abundant, precludes some management options for other more desirable species, and may limit production of other game and non-game fish species through various interspecific interactions.

Source: WGFD 2005
cfs cubic feet per second

At the time this Draft RMP/EIS was prepared, the Fish Division of the WGFD was reevaluating the boundaries of aquatic Basin Management Plans. The WGFD databases have been updated and reflect the basin names used in the fish tables provided in this appendix. The information in Table E.2 is correct for the basin area name identified in Table E.2. However, revision of the narrative report associated with each Basin Management Plan was not complete at the time this Draft RMP/EIS was prepared. Therefore, discrepancies exist between basin names identified in Table E.2 and the associated narrative reports listed below. While the information presented in Table E.2 is available in the following narrative reports, a direct comparison between the basin name identified in Table E.2 and the following narrative reports is not possible at this time.

Although not reproduced here, references for the Basin Management Plan narrative reports follow:

WGFD (Wyoming Game and Fish Department). 1995. Basin Management Plan LE030. Basin: Lower Laramie River.

WGFD. 1996. Basin Management Plan LE050. Basin: North Laramie River.

WGFD. 1996. Basin Management Plan. Basin: Cheyenne River.

WGFD. 1996. Basin Management Plan. Basin: Glendo Reservoir.

WGFD. 1996. Basin Management Plan. Basin: Guernsey Reservoir and North Platte River from Guernsey Reservoir to the State Line.

WGFD. 1996. Basin Management Plan. Basin: North Platte River from Glendo Dam to Guernsey Reservoir.

WGFD. 1996. Basin Management Plan. Basin: North Platte River from Pathfinder Dam to Alcova Reservoir.

WGFD. 1996. Basin Management Plan. Basin: North Platte River, Goose Egg Bridge to Mills Bridge.

WGFD. 1996. Basin Management Plan. Basin: North Platte River, Mills Bridge to Glendo Reservoir.

WGFD. 1996. Basin Management Plan. Basin: North Slope of the Laramie Range (Garden Creek to Cottonwood Creek).

WGFD. 1996. Basin Management Plan. Basin: Pine Ridge to Nebraska.

WGFD. 1996. Basin Management Plan. Basin: South Fork of the Powder River and Salt Creek Drainages.

WGFD. 1998. Basin Management Plan. Basin: Seminoe, Kortes, Pathfinder, Alcova, and Gray Reef Reservoirs.

WGFD. 2002. Basin Management Plan (Revised) LE040. Basin: Chugwater Creek and Wheatland Creek.

E1.3. Fish and Wildlife Resources – Wildlife

E1.3.1. Big Sagebrush Monitoring

Following is text provided to the BLM by the WGFD and cited in Chapter 3 as WGFD 2004a. The text may include opinions and statements that may not agree with or represent the opinions or policies of the BLM. In addition, the information provided here by the WGFD has not undergone a complete technical edit and review.

Bates Hole Habitat Inventory and Evaluation Area

In the Bates Hole area, WGFD personnel in cooperation with BLM personnel have been monitoring big sagebrush production and utilization since 1993. The intent of this monitoring was to determine if utilization (browsing) by domestic livestock and wildlife would increase or decrease big sagebrush production. Secondly, if utilization affected big sagebrush production, what level of utilization was considered detrimental to the big sagebrush community (i.e., life cycle). Following several years of monitoring, we have determined that not only does utilization affect big sagebrush production, but spring (April to June) precipitation patterns play an integral role in big sagebrush production. Furthermore, we have determined in Bates Hole that approximately 35 percent use of the current year's production is the point where utilization may be having detrimental impacts on individual big plants and the big sagebrush community as a whole.

Therefore, we wanted to convey to the public how production and utilization was affecting the big sagebrush community; hence we developed a use index. The use index was derived by taking 35 percent, which is the level where percent leaders browsed is considered excessive, and dividing by the highest current year's growth observed during our monitoring efforts (use index equals percent leaders browsed (ocular estimate) / current year's growth (annual growth)). This formula developed a threshold, which is depicted by the line where the red shaded area meets the green shaded area (Figure E-1). At this point, utilization on current year's growth becomes excessive and may be having detrimental impacts on the big sagebrush community (i.e., decline in plant vigor, poor seed production, increased plant mortality, and reduced carrying capacity). Furthermore, even though some use indices fall within the green shaded area, there are still impacts to big sagebrush plants and communities.

Figure E-1 depicts the use indices over 10 years, 1993 to 2002. During those 10 years, 7 have been within the red shaded area, which is indicative of excessive use and detrimental impacts to big sagebrush plants and communities. In those years where current year's growth is high and percent leaders browsed approaches 35 percent, the index approaches the threshold. Furthermore, the use index will increase

proportionately as current year's growth decreases and percent leaders browsed increases. The inverse is also true, as current year's growth increases and percent leaders browsed decreases, the use index will decrease (fall within the green shaded area). At the present time, we have calculated the use index threshold for Bates Hole to be 0.213. Since 1993, use indices have an upward trend, which may be indicative of a big sagebrush community in poor condition. Figure E-2 shows the average annual growth of big sagebrush in Bates Hole as it correlates to spring precipitation.

Figure E-1. Bates Hole Big Sagebrush Use Index

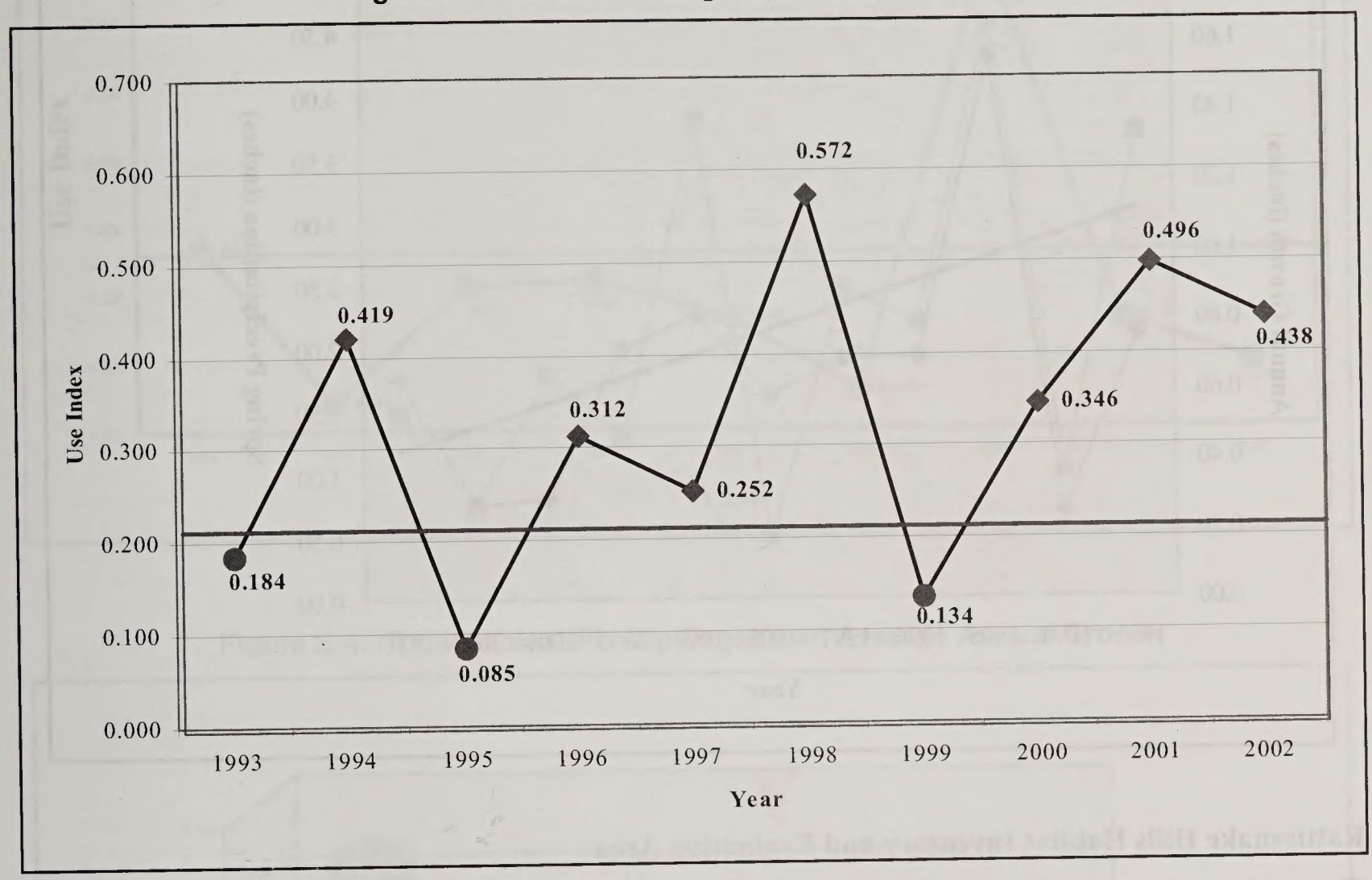
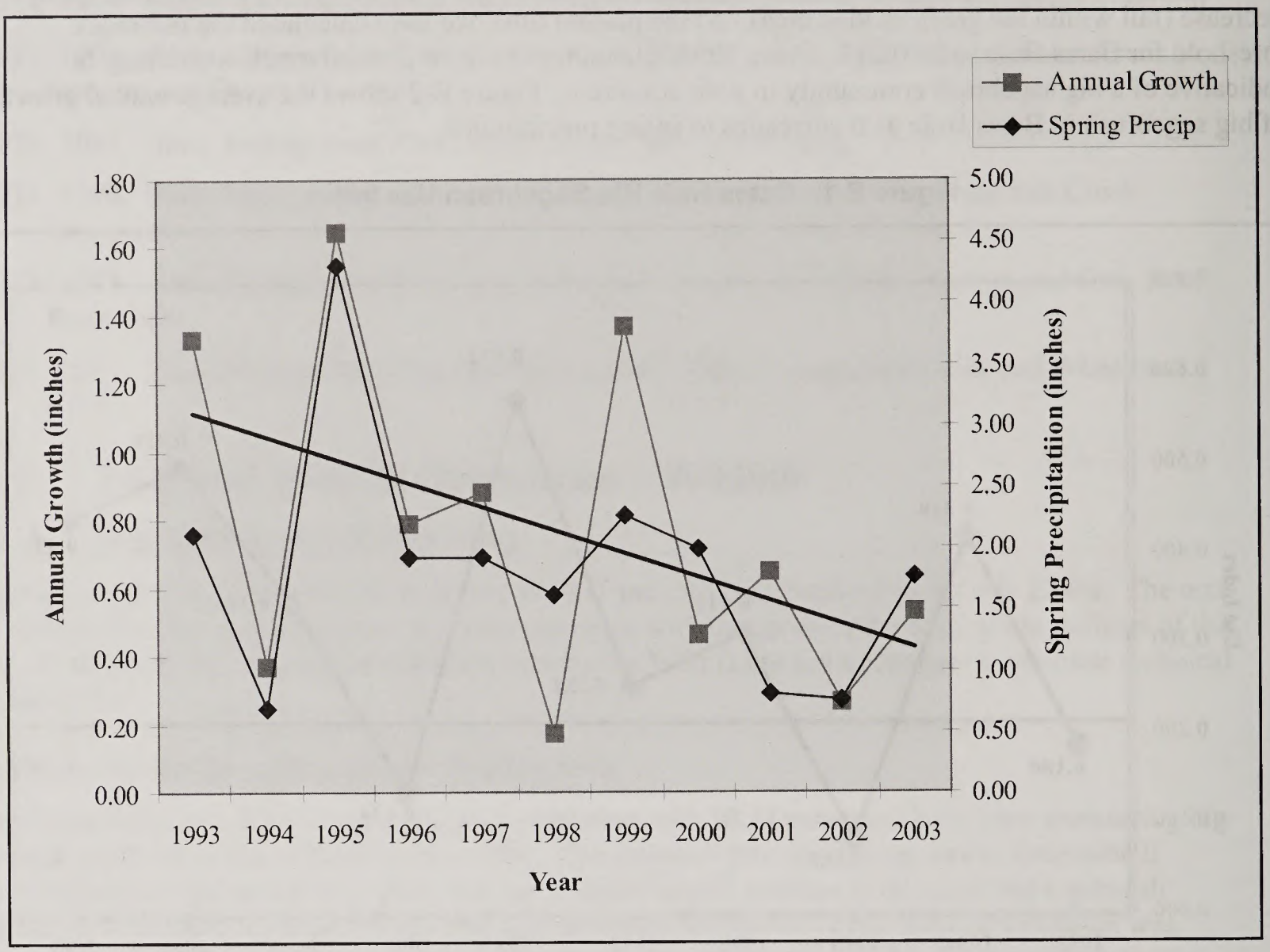


Figure E-2. Bates Hole Big Sagebrush Average Annual Growth



Rattlesnake Hills Habitat Inventory and Evaluation Area

The use index in the Rattlesnake Hills is virtually the exact opposite of that in Bates Hole. Out of nine data points, only two occur within the red shaded area, or the where percent leaders browsed is considered excessive (Figure E-3). The remaining seven points are within the green shaded area, which is indicative of less severe impacts to individual big sagebrush plants, but there are still impacts. We have calculated the use index at 0.259, which is the threshold where percent leaders browsed is considered excessive and detrimental impacts to big sagebrush may be occurring. In 2000, we documented a significant increase in utilization, primarily from wintering domestic sheep, which contributed to the spike in the use index. Figure E-4 shows the average annual growth of big sagebrush for Rattlesnake Hills.

Figure E-3. Rattlesnake Hills Big Sagebrush Use Index

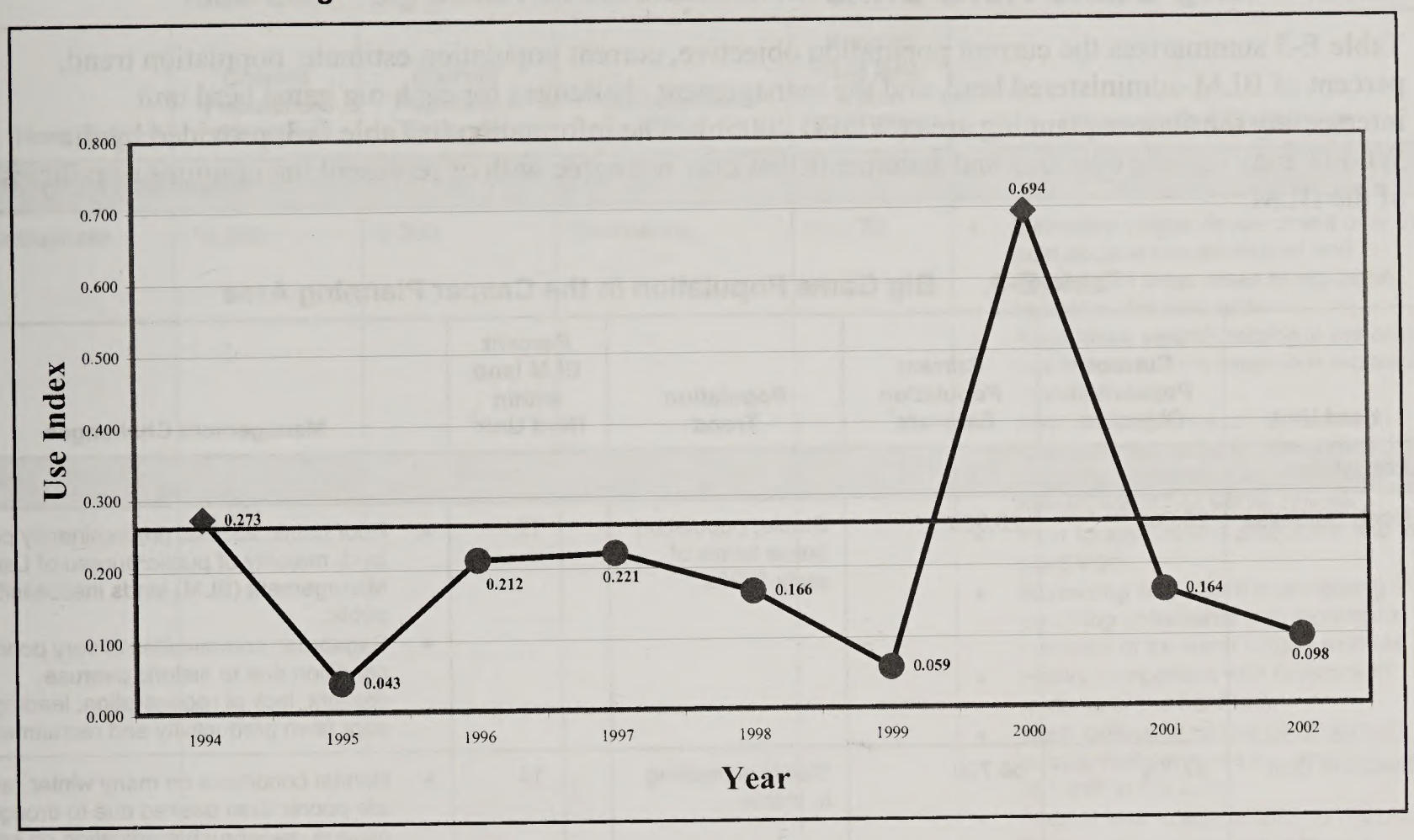
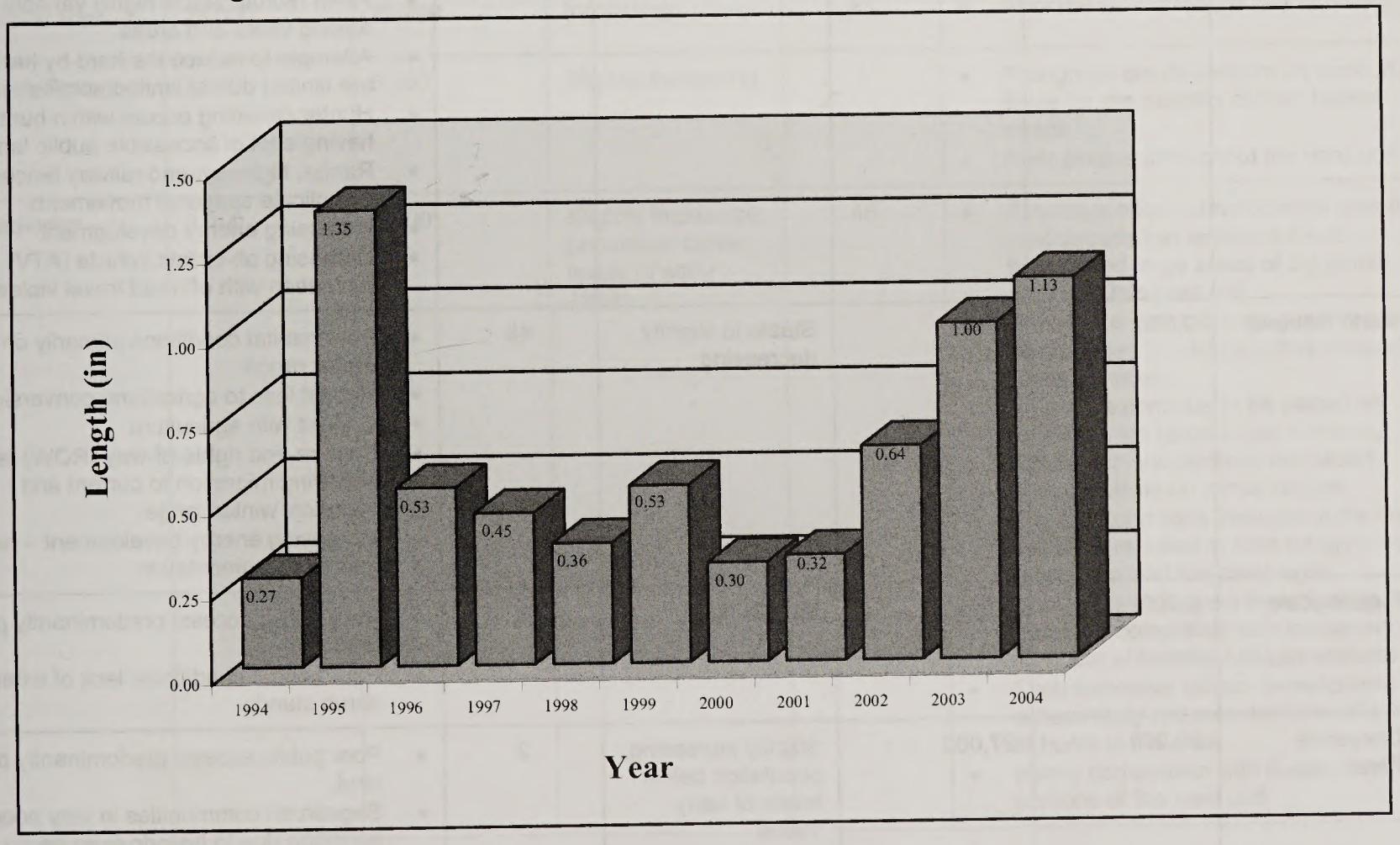


Figure E-4. Rattlesnake Hills Big Sagebrush Average Annual Growth



E1.4. Big Game Herd Units

Table E-3 summarizes the current population objective, current population estimate, population trend, percent of BLM-administered land, and the management challenges for each big game herd unit intersecting the Casper planning area (WGFD 2005b). The information in Table E-3, provided by the WGFD, may include opinions and statements that may not agree with or represent the opinions or policies of the BLM.

Table E-3. Big Game Population in the Casper Planning Area

Herd Unit	Current Population Objective	Current Population Estimate[1]	Population Trend	Percent BLM land within Herd Unit[2]	Management Challenges
Pronghorn					
North Converse	28,000	23,300	Stable; population below levels of early 1990s	12	• Poor public access; predominantly private land; majority of public/Bureau of Land Management (BLM) lands inaccessible to public • Sagebrush communities in very poor condition due to historic overuse, drought, lack of regeneration; leading to poor fawn productivity and recruitment
Medicine Bow	60,000	56,700	Slowly increasing to stable	14	• Habitat conditions on many winter ranges are poorer than desired due to drought, old age, sagebrush eradication on some ranges, and historic over-utilization • Adult survival appears to be lower than average in some hunt areas • Fawn recruitment is highly variable among years and areas • Attempts to reduce the herd by harvest are limited due to limited access • Hunter crowding occurs within hunt areas having a lot of accessible public land • Range, highway, and railway fences complicate seasonal movements • Increasing energy development • Increasing all-terrain vehicle (ATV) recreation with off-road travel violations
North Natrona	9,000	7,400	Stable to slightly decreasing	48	• Poor habitat conditions primarily on winter range • Habitat loss to agricultural conversion • Conflict with agriculture • Pasture and rights-of-way (ROW) fences impeding migration to current and historical winter range • Increasing energy development – habitat loss and fragmentation
Meadowdale	6,000	6,900	Increasing	3	• Poor public access; predominantly private land • Poor habitat conditions; lack of extensive shrub stands
Cheyenne River	38,000	27,000	Slightly increasing; population below levels of early 1990s	2	• Poor public access; predominantly private land • Sagebrush communities in very poor condition due to historic overuse, drought, lack of regeneration

Table E-3. Big Game Population in the Casper Planning Area (Continued)

Herd Unit	Current Population Objective	Current Population Estimate[1]	Population Trend	Percent BLM land within Herd Unit[2]	Management Challenges
Pronghorn (Continued)					
Rattlesnake	12,000	8,300	Decreasing	32	• Extensive oil/gas development over the past decade has eliminated and fragmented large areas of big game habitat in this herd unit • Repetitious seismic testing in the area has resulted in a tremendous increase in road/trail miles • New wells continue to be placed on crucial winter range in the summer, resulting in substantially increased human activity on winter ranges • Poor forage/browse production and low plant vigor • Increasing time spent investigating poaching complaints with increased numbers of transient oil/gas workers • Heavy competition with livestock in portions of the herd unit • Such extensive oil/gas development substantially reduces the aesthetic value of hunts in the area • Habitat loss to agricultural conversion • Poor public access; predominantly private land; majority of public/BLM lands inaccessible to public
Beaver Rim	25,000	22,700	Increasing	41	• Poor habitat conditions due to drought
Hawk Springs	7,000	5,200	Slightly increasing	1	• Pronghorn are dependent on agriculture fields for the majority of their habitat needs • Poor access throughout the herd unit
Badwater	3,000	2,200	Slightly increasing; population below levels of early 1990s	48	• Extensive oil/gas development over the past decade has eliminated and fragmented large areas of big game habitat in this herd unit • Repetitious seismic testing in the area has resulted in a tremendous increase in road/trail miles • New wells continue to be placed on crucial winter range in the summer, resulting in substantially increased human activity on winter ranges • Drought conditions throughout the herd unit have resulted in poor forage/browse production and low plant vigor • Increasing time spent investigating poaching complaints with increased numbers of transient oil/gas workers • Such extensive oil/gas development substantially reduces the aesthetic value of hunts in the area • Heavy competition with livestock in portions of the herd unit

Table E-3. Big Game Population in the Casper Planning Area (Continued)

Herd Unit	Current Population Objective	Current Population Estimate[1]	Population Trend	Percent BLM land within Herd Unit[2]	Management Challenges
Pronghorn (Continued)					
Middle Fork	2,100	3,600	Stable	47	• Poor public access in most of the herd unit • Sagebrush communities in very poor condition due to historic overuse, drought, lack of regeneration • Some sagebrush stands eliminated due to spraying
North Ferris	5,000	2,900	Increasing	37	• Some fences impede pronghorn movements and migrations • Some riparian habitats in poor condition, affecting fawn production and survival
Dwyer	4,000	4,400	Decreasing	4	• Poor fawn production due to drought/habitat conditions • Majority of the sagebrush community converted to agricultural production through mechanical and chemical treatments
Mule Deer					
Southwest Bighorn	28,000	21,700	Slightly increasing	43	• Somewhat difficult public access • Some sagebrush communities dying due to drought • Poor forage production due to drought
Pumpkin Buttes	11,000	12,000	Stable	49	• Poor public access creates problems with achieving harvest objectives • Sagebrush communities in poor condition due to historic overuse, drought, lack of regeneration • Heavy use of rangelands decreases diversity and productivity
Upper Powder River	18,000	16,500	Decreasing	47	• Poor public access creates problems with achieving harvest objectives in some portions of the herd unit • Public land areas over-hunted • Sagebrush communities in poor condition due to historic overuse, drought, lack of regeneration. • Some sagebrush stands eliminated due to spraying • High mortality of limber pine stands • Conifer encroachment in curl-leaf mountain mahogany stands • Increasing ATV recreation with off-road travel violations
Goshen Rim	25,000	21,000	Slightly increasing	2	• Poor public access; predominantly private land; majority of public/BLM lands inaccessible to public • Deer are very dependant on crop production • Shrub species old, with little nutrient value

Table E-3. Big Game Population in the Casper Planning Area (Continued)

Herd Unit	Current Population Objective	Current Population Estimate[1]	Population Trend	Percent BLM land within Herd Unit[2]	Management Challenges
Mule Deer					
Laramie Peak	29,000	27,000	Stable	9	• Little access in the southern end of the Herd Unit; mostly private land-makes any management decisions difficult • Shrub species (primarily mountain shrubs such as true mountain mahogany) old with little nutrient value • High Chronic Wasting Disease (CWD) prevalence rate • Cheatgrass invasion • Increased competition from elk • Fire suppression
Sweetwater	6,000	4,000	Increasing	70	• Poor habitat conditions due to drought • Winter range conditions remain poor to fair
Ferris	5,000	2,300	Stable	32	• Some riparian habitats in poor condition, affecting fawn production and survival • Some fences impede deer movements and migrations
Beaver Rim	2,600	730	Increasing slightly; population below levels of early 1990s	30	• Over the past several years, drought conditions throughout the herd unit have resulted in poor forage/browse production and low plant vigor • Oil/gas development is increasing rapidly in this area
Thunder Basin	20,000	19,300	Stable; population below levels of early 1990s	0	• Sagebrush communities in very poor condition due to historic overuse, drought, lack of regeneration • Poor public access; predominantly private land • Lack of understory (food/cover), including woody shrubs, in riparian cottonwood communities due to livestock grazing
Lance Creek	18,000	14,800	Stable	2	• Sagebrush communities in very poor condition due to historic overuse, drought, and lack of regeneration • Poor public access; predominantly private land • Lack of understory (food/cover), including woody shrubs, in riparian cottonwood communities due to livestock grazing
North Converse	9,100	9,400	Decreasing	12	• Poor public access; predominantly private land; majority of public/BLM lands inaccessible to public • Sagebrush communities in poor condition due to historic overuse, drought, and lack of regeneration

Table E-3. Big Game Population in the Casper Planning Area (Continued)

Herd Unit	Current Population Objective	Current Population Estimate[1]	Population Trend	Percent BLM land within Herd Unit[2]	Management Challenges
Mule Deer (Continued)					
South Converse	16,000	10,100	Decreasing	2	• Crucial winter ranges (mountain shrub communities) in very poor condition due to drought, lack of fire, and senescence • Increased prevalence of cheatgrass • Poor public access; predominantly private land • High prevalence of CWD
Rattlesnakes	5,500	3,600	Stable	35	• Extensive oil/gas development over the past decade has eliminated and fragmented large areas of big game habitat in this herd unit • Repetitious seismic testing in the area has resulted in a tremendous increase in road/trail miles • New wells continue to be placed on crucial winter range in the summer, resulting in substantially increased human activity on winter ranges • Poor forage/browse production and low plant vigor • Increasing time spent investigating poaching complaints with increased numbers of transient oil/gas workers • Heavy competition with livestock in portions of the herd unit • Habitat loss to agricultural conversion and cabin sites • Poor public access; predominantly private land; majority of public/BLM lands inaccessible to public
Bates Hole / Hat Six	12,000	7,000	Decreasing	26	• Crucial winter ranges (mountain shrub communities) in very poor condition due to drought, lack of fire, and senescence • Poor public access in some portions of the herd unit • Habitat loss to urbanization • Increased prevalence of cheatgrass • Increasing ATV recreation with off-road travel violations
North Natrona	6,500	3,400	Stable	48	• Extensive oil/gas development over the past decade has eliminated and fragmented large areas of big game habitat in this herd unit • Crucial winter ranges (mountain shrub – curl-leaf mountain mahogany and sagebrush communities) in very poor condition due to drought, lack of fire, and senescence • Habitat loss to agriculture conversion • Conflict with agriculture • Increasing ATV recreation with off-road travel violations

Table E-3. Big Game Population in the Casper Planning Area (Continued)

Herd Unit	Current Population Objective	Current Population Estimate[1]	Population Trend	Percent BLM land within Herd Unit[2]	Management Challenges
White-tailed Deer					
Central	NA	NA	Increasing, but fluctuates during Epizootic Hemorrhagic Disease (EHD) outbreaks	19	• Lack of understory (food/cover), including woody shrubs, in riparian cottonwood communities due to livestock grazing • CWD prevalent in some areas
Southeast Wyoming	NA	NA	Increasing, but fluctuates during EHD outbreaks	4	• Outbreaks of Epizootic Hemorrhagic Disease (EHD) • Difficult access • CWD prevalent in some areas
Powder River	8,000	14,000	Increased substantially since 1980s	48	• Urban development limits management options • Private property access limiting access and harvest • CBM development results in reduced access/opportunity • Disease concerns: periodic EHD outbreaks, CWD, fibromas • High rate of deer / vehicle collisions
Elk					
Laramie Peak/Muddy Mountain	5,000	6,400	Increasing	9	• Poor public access in much of herd unit, with interspersed private and public lands; many BLM lands inaccessible to public in southern portion of herd unit • Lack of aspen regeneration • Illegal ATV use on public lands, disrupting elk security areas • Cheatgrass invasion
Rattlesnakes	200	770	Increasing	35	• Lack of public/hunter access impedes management ability
South Bighorns	2,900	4,900	Increasing	47	• Poor public access creates problems with achieving harvest objectives in some portions of the herd unit • Accessible public lands receive heavy hunting pressure • High mortality of limber pine stands • Increasing ATV recreation with off-road travel violations
Shirley Mountain	800	800	Stable to slightly decreasing	43	• Difficult to get adequate harvest because of large ranches creating refuges • Habitat conditions on many winter ranges are poorer than desired due to drought, old age, and historic over-utilization • Hunter crowding occurs within accessible public lands
Green Mountain	500	1,300	Increasing through mid 1990s; recently decreasing	32	• Elk in Hunt Area 128 are difficult to manage as elk appear to use this hunt area on a somewhat intermittent basis; dependent on hunting pressure from adjacent areas and private lands along the Sweetwater River

Table E-3. Big Game Population in the Casper Planning Area (Continued)

Herd Unit	Current Population Objective	Current Population Estimate[1]	Population Trend	Percent BLM land within Herd Unit[2]	Management Challenges
Elk (Continued)					
Ferris	350	500	Increasing through 1990s; recently decreasing	37	• Little elk use of habitats within the Casper planning area except during severe winters
Rochelle Hills	400	460	Increasing	2	• Extensive road networks and illegal off-road vehicle use on public lands, disrupting elk security areas • Lack of understory (food/cover) in riparian cottonwood communities due to livestock grazing
Rawhide	40	350+	Increasing	4	• Poor public access, predominantly private land; resulting in an inability to obtain sufficient harvest
Iron Mountain	1,800	NA	Increasing	10	• Poor public access; predominantly private land; vast majority of public/BLM lands inaccessible to public
Pine Ridge	125	NA	Increasing	18	• Poor public access; predominantly private land; vast majority of public/BLM lands inaccessible to public
Bighorn Sheep					
Laramie Peak	500	NA, currently below objective	Increasing		• Poor public access; predominantly private land; vast majority of public/BLM lands inaccessible to public • Disease outbreaks - pneumonia • Cheatgrass invasion • Conifer encroachment; fire suppression

Source: WGFD 2005b

[1]Estimates are postseason population estimates for 2003.

[2] Figures only represent lands within each Herd Unit occurring within the Casper planning area.

NA Not available

E1.5. Nongame Mammals

Table E-4, provided by the WGFD, identifies the nongame mammals potentially occurring within the planning area.

Table E-4. Potential Nongame Mammals in Casper Planning Area

Common Name	Scientific Name	Habitat[1]
Eastern red bat	*Lasiurus borealis*	Coniferous/deciduous forest, riparian woodlands
Hoary bat	*L. cinereus*	Coniferous/deciduous forest, riparian woodlands
Silver-haired bat	*Lasionycteris noctivagans*	Coniferous/deciduous forest, riparian woodlands
Eastern pipistrelle	*Pipistrellus subflavus*	Wooded areas, caves, and abandoned mines
Meadow vole	*Microtus pennsylvanicus*	Moist meadow grasslands
Sagebrush vole	*Lemmiscus curtatus*	Basin-prairie shrublands
Long-tailed vole	*Microtus longicadus*	Sagebrush, grassland, coniferous forests
Prairie vole	*M. ochrogaster*	Shrubland and grassland
Plains pocket gopher	*Geomys bursarius*	Sagebrush and grassland
Northern pocket gopher	*Thomomys talpoides*	Most habitats
Masked shrew	*Sorex cinereus*	Riparian areas, moist meadow shrublands
Merriam's shrew	*S. merriami*	Basin-prairie shrublands
Dusky shrew	*S. monticolous*	Cottonwood riparian, talus, sagebrush-grassland
White-footed mouse	*Peromyscus leucopus*	Deciduous woodlands
Deer mouse	*P. maniculatus*	All habitats
Eastern mole	*Scalopous aquaticus*	Plains grasslands
Yellow-pine chipmunk	*Tamius amoenus*	Sagebrush-grassland, coniferous forests
Ord's kangaroo rat	*Dipodomuys ordii*	Basin-prairie shrublands
Grey fox	*Urocyon cinereoargenteus*	Basin-prairie shrublands, confierous forests
Least chipmunk	*T. minimus*	Most habitats
Yellow-bellied marmot	*Marmota flaviventris*	Rock outcrops
Wyoming ground squirrel	*Spermophilus elegans*	Basin-prairie shrublands
Golden-manteled ground squirrel	*S. lateralis*	Mountain foothill grasslands
Thirteen-lined ground squirrel	*S. tridecemlineatus*	Basin-prairie shrublands
Western harvest mouse	*Reithrodontomys megalotis*	Basin-prairie shrublands
Northern grasshopper mouse	*Onychomys leucogaster*	Basin-prairie shrublands
Bushy-tailed woodrat	*Neotoma cinerea*	Most habitats
Western jumping mouse	*Zapus princeps*	Moist meadow grasslands
Meadow jumping mouse	*Z. hudsonicus*	Moist meadow grasslands

Source: WGFD 2005c

[1]For a complete habitat description, refer to WGFD 2004b – Atlas of Birds, Mammals, Amphibians, and Reptiles in Wyoming.

E1.6. Greater Sage-Grouse

The following text is a Greater Sage-Grouse Assessment from the WGFD (2005d). A summary of this information is found in Chapter 3 and cited as WGFD 2005. The following paragraphs, provided by the WGFD, may include opinions and statements that may not agree with or represent the opinions or policies of the BLM. In addition, the information provided by the WGFD has not undergone a complete technical edit and review.

From the beginning of recorded history, sage-grouse have been part of Wyoming and the Wyoming way of life. Native Americans mimicked them, early travelers wrote about them, and pioneers subsisted on them. For generations of Wyoming hunters, the opening day of "sage chicken" season was the first

official day of autumn. In recent years, wildlife enthusiasts have been fascinated by the birds' dramatic spring courtship rituals.

Up until the middle of the 20th century, sage-grouse flourished in Wyoming and throughout most of the West. By the mid-1950s biologists in the western states began to express concerns about populations of sage-grouse and sagebrush-steppe habitats. That led the Western Association of Fish and Wildlife Agencies – of which Wyoming was, and is, a member – to establish the Western States Sage-grouse Technical Committee in 1956. Since that time, much sage-grouse information has been amassed, including the initial "Guidelines for the Protection of Sage-grouse," first published in 1977. In 2000, this document was revised, updated, and expanded to become the "Guidelines to Manage Sage-grouse Populations and their Habitats" (Connelly et al. 2000). The guidelines provide management suggestions for biologists and land managers to use in managing sage-grouse populations and sagebrush-steppe habitats throughout the West.

By most accounts, including the recently completed range-wide "Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats" (Connelly et al. 2004), the numbers of sage-grouse have declined across their range during the past 50 years, as has the quality and distribution of the bird's requisite sagebrush-steppe habitat.

Sage-grouse are found throughout the sagebrush/grassland habitats of Bates Hole, the Shirley Basin, the Rattlesnake Hills, the south end of the South Bighorn Mountains, and the Laramie Range Mountains. Occupied habitat is fairly contiguous throughout much of Bates Hole and the Shirley Basin. Habitats within the Rattlesnake Hills and the south end of the South Bighorns are more fragmented by changes in habitat type and oil/gas development. Sage-grouse habitat in the Laramie Range is primarily limited to that portion of the west slope of the Laramie Range. Large, contiguous blocks of sagebrush/grassland communities east of the Laramie Range have, for the most part, been eliminated.

Management data collected by the WGFD, with assistance from the BLM and various volunteers, for sage-grouse have focused on lek counts and surveys, harvest statistics, and data derived from wings collected from harvested birds. Lek counts and surveys have been conducted within the Casper planning area since at least 1967. Lek counts are conducted in April and early May. Individual leks are counted 3 times in 7 to 10 day intervals. Lek counts are conducted to estimate trends in the population based on the average peak male attendance. Lek surveys are also conducted in the spring, but are only conducted one time per lek to determine general lek status (i.e., active/inactive). Some sage-grouse brood data has also been collected and documented typically during August. These brood counts provide some indication of population trends; however, their use is limited in estimating recruitment because the surveys are not conducted in either a systematic or consistent manner and sample sizes are small.

Past management of sage-grouse within the Casper planning area focused mainly on the protection and/or enhancement of their habitats and protection of leks during the breeding season. Protection efforts have primarily occurred through the project review process conducted by State and Federal agency personnel. Sage-grouse have been given increasing consideration through the project review process with emphasis on minimizing disturbance during the breeding season within and around the lek sites and protections for sage-grouse nesting and early brood rearing habitats.

Sage-Grouse Biology

The greater sage-grouse (*Centrocercus urophasianus*) is the largest species of grouse in North America. It is appropriately named due to its year-round dependence on sagebrush (*Artemisia* spp.) for both food and cover. Insects and forbs also play an important role in their food habits, but primarily during the breeding season. In general, the sage-grouse is a mobile species, capable of movements greater than 50

kilometers (km) between seasonal ranges. Despite this mobility, sage-grouse appear to display substantial amounts of fidelity to seasonal ranges. Sage-grouse populations are characterized by relatively low productivity and high survival. Sage-grouse depend on sagebrush for much of their annual food and cover. This close relationship is reflected in the North American distribution of sage-grouse, which is closely aligned with sagebrush, and in particular big sagebrush (*A. tridentata*) and silver sagebrush (*A. cana*). This relationship is perhaps tightest in the late autumn, winter, and early spring when sage-grouse are completely dependent on sagebrush for both food and cover. However, sage-grouse also depend on sagebrush at other times of year, primarily for protective cover, such as for nests during the breeding season. Other habitat characteristics may be less overtly important than sagebrush, but may be nearly as important. For example, herbaceous cover may provide both food and cover during the nesting and early brood-rearing seasons, thus playing a major role in the population dynamics of sage-grouse. For detailed discussions see Connelly et al. 2004.

Perhaps the most appropriate description of sage-grouse habitats and habitat use during nesting, early brood-rearing, and late brood-rearing within a portion of the Casper planning area is from Holloran (1999).

Nesting and Nesting Habitat – In the Bates Hole portion of the Casper planning area successful nests were found in stands of tall, dense sagebrush with increased residual grass height (greater than 12 centimeters or 4.7 inches) and forb cover, especially food forb cover. It was speculated increased food forb cover reduced hen foraging effort thereby reducing activity and scent around the nest and hence reducing the probability of detection by predators. Hen fidelity was similar to that reported by others. Successive nests were located an average of 710 meters (approximately 2,330 feet) apart. This exemplifies the need to identify and conserve existing nesting habitat within the Casper planning area. Any reduction in herbaceous cover in the sagebrush communities would negatively affect sage-grouse nesting habitat and success. Therefore, any attempts to modify sagebrush habitats should only be implemented in areas where proximal suitable habitats exist. Further, sagebrush thinning opposed to complete removal is preferred as this would allow for an increase in herbaceous vegetation without eliminating the needed shrub component.

Early Brood-rearing – The majority of chick loss (75 percent) within the study area occurred between hatch and 2 to 3 weeks of age. Therefore, early brood-rearing habitat is extremely important. Early brood-rearing habitats identified in this portion of the Casper planning area were typified by decreased shrub cover and height and increased forb and overall herbaceous cover. Hens with broods selected for the herbaceous components within sagebrush dominated sites. This makes sense as chicks less than 10 days old require insects in their diets for normal growth, development, and ultimately survival. Further, after the first week of life, forbs replace insects in the chick's diet. It is hypothesized that in the study area hen selection for early brood-rearing sites was based on forb and insect availability, not for the decreased shrub component. As with nesting habitat, management practices designed to eliminate shrub cover should be avoided. Treatments creating mosaics of different shrub seral stages, heights and densities are recommended. Further, it is recognized grazing is required to disturb areas with healthy herbaceous understories. This practice keeps the herbaceous cover from becoming overly rank and allows the establishment of weedy forbs used by hens and their broods as a food source. It is emphasized, while grazing is a valuable tool, overgrazing will decrease grass heights important as the screening component in the preferred low sagebrush density areas during early brood-rearing.

Late Brood-rearing – Hens with broods shifted from early brood-rearing areas into areas with shorter residual grass, decreased shrub density, and less non-food forb cover typically in early July when upland vegetation became desiccated. It was evident hens were selecting for areas that provided a food source at the expense of escape or screening cover. Sagebrush dominated sites (microsites) with increased succulent vegetation were preferred, but open riparian zones were used during drier periods. Similarly

barren hens and roosters selected later summer habitats based on food availability with less regard to screening or escape cover. Management practices providing a mosaic of open areas and shrub patches in different seral stages, heights, and densities are recommended. Again, total elimination of the shrub component would be detrimental. It is especially important livestock grazing on sage-grouse summer habitats be managed to ensure adequate residual vegetation is provided for.

During winter, sage-grouse feed almost exclusively on sagebrush leaves and buds. Suitable winter habitat requires sagebrush typically 10 to 14 inches above the snow. Sagebrush canopy covers utilized may range from 10 to 30 percent. Winter foraging areas tend to be gentle southwest facing slopes and windswept ridges. Roosting areas can range from open slopes with low growing sagebrush on calm nights to heavier, taller shrubs during windy periods. Sage-grouse movement (greater than 5 miles) and changes in elevation (greater than 1,000 feet) are common between winter feeding sites and suitable roosting sites (WGFD 2003). Specific wintering areas (foraging and roosting) of sage-grouse within the planning area have not been widely documented. This should be a priority.

Sage-Grouse Population and Trend

Sage-grouse are generally found throughout the Casper planning area with the exception of the more heavily forested, agriculturally developed, and urbanized areas. The Casper planning area encompasses 12 of the WGFD Upland Game Management Areas (8, 18, 22, 27, 28, 30, 32, 33, 35, 36, 37, and 45). Of course, the Resource Area boundary and the boundaries of these areas do not coincide. Population trend data is collected, stored, and analyzed by the WGFD using these areas. Therefore, some data included in this analysis is from sage-grouse not included in the Casper planning area. Data from areas 18 and 45 were excluded from these analyses because the majority of data collected in these areas was not within the Casper planning area.

It is believed monitoring male attendance on leks provides a reasonable index of relative change in abundance in response to prevailing environmental conditions over time. Nevertheless, this data must be viewed and interpreted with caution for several reasons described in the Wyoming Greater Sage Grouse Conservation Plan, 2003.

Lek count surveys have been conducted within the Casper planning area since the late 1950s; however, the most consistent data were collected starting in 1996. The number of leks counted within the Casper planning area has increased markedly since 1958. Concurrent with increased monitoring effort the number of grouse (males) has also increased. The increased number of grouse counted is not a reflection of population increase, rather one of increased monitoring effort. The number of males observed per lek has decreased by more than 31 percent since 1958 (Figure E-5). More recently, the number of males counted per lek increased through the 1980s, peaked in 1992, dramatically declined through the early 1990s to an all time low from 1994 to 1997, and has since recovered to a level similar to the early 1980s (Figure E-6). Fluctuations in the number of grouse observed on leks are not due to changes in grouse numbers exclusively. These data reflect changes in lek survey effort. Certainly, since data collection was standardized in 1996, the number of male grouse counted on leks has exhibited some recovery.

Figure E-5. Number of Males Observed Per Lek during Lek Counts by Decade, 1970 through 2004, within the Casper Planning Area

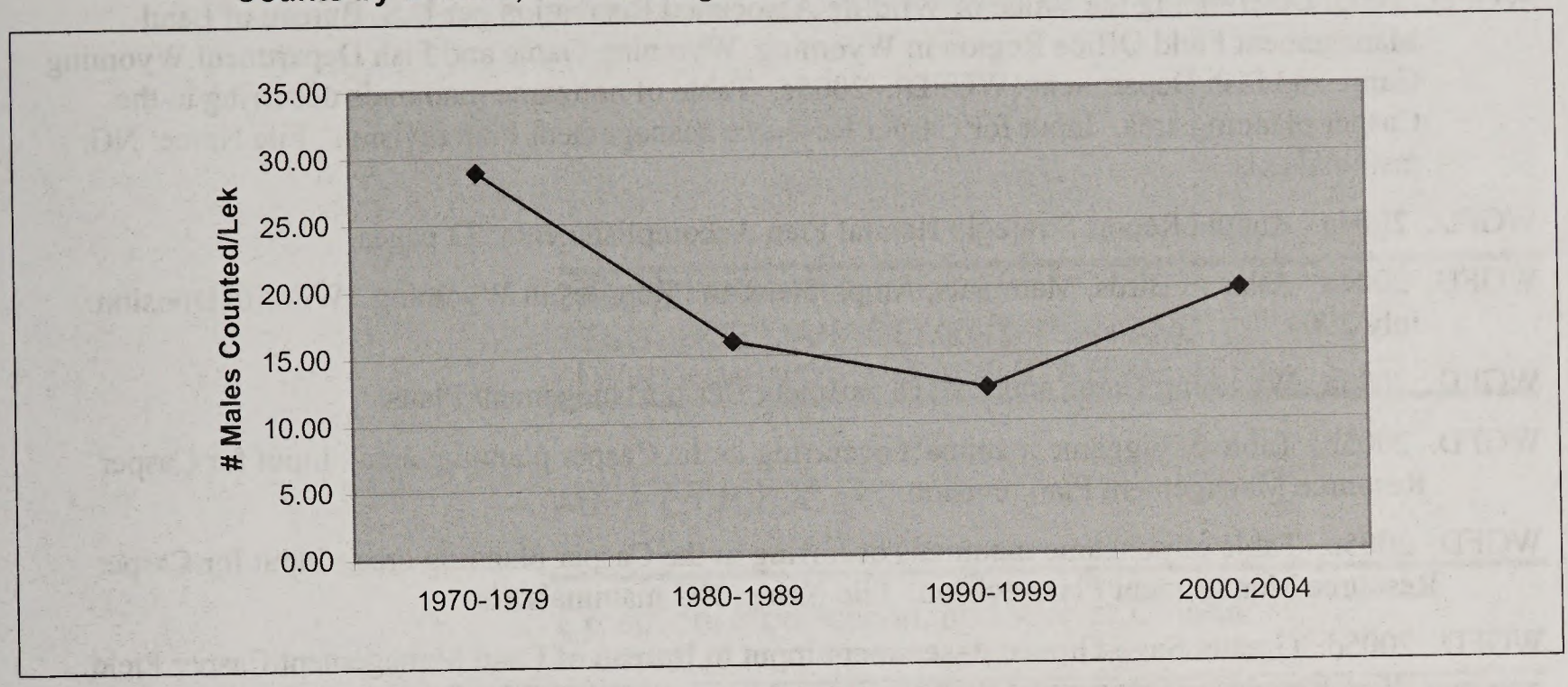
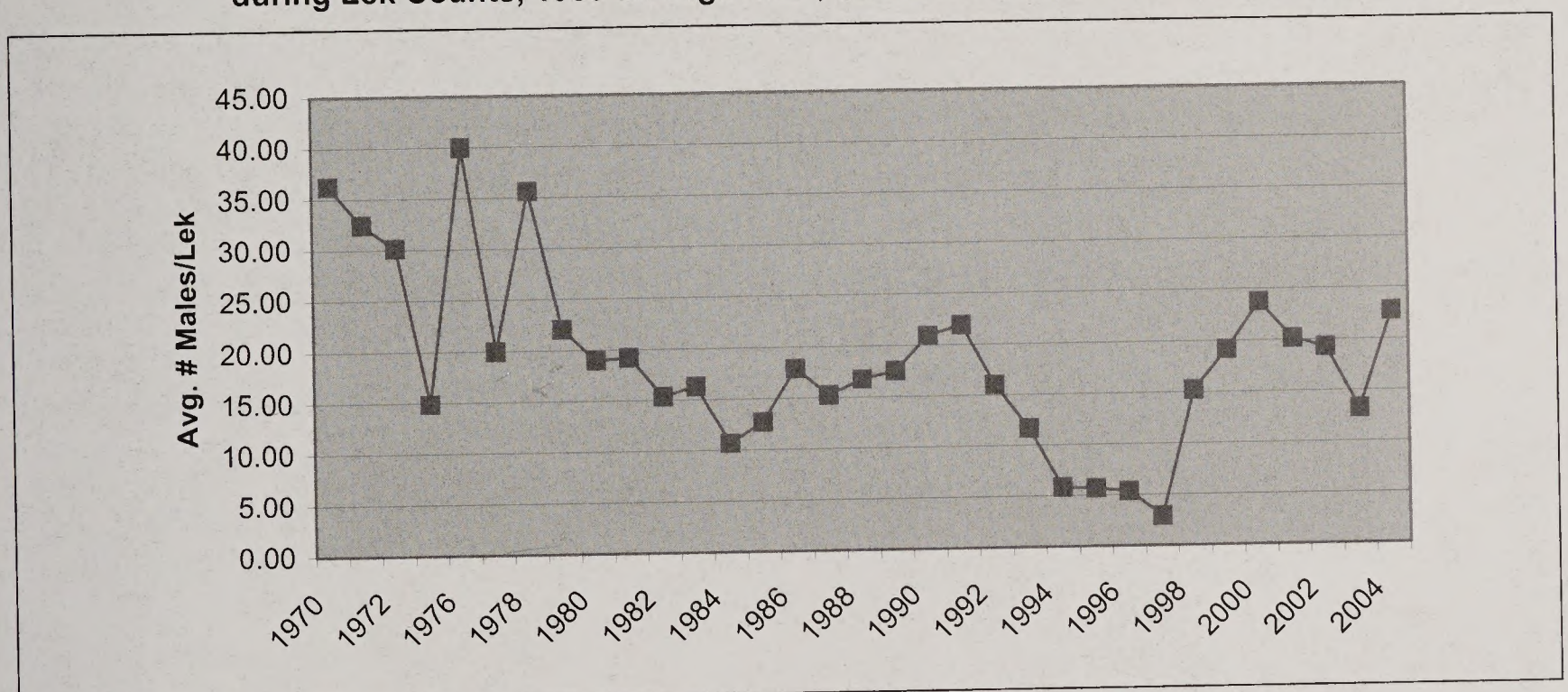


Figure E-6. Average Number of Males Per Lek Observed during Lek Counts, 1980 through 2004, within the Casper Planning Area



E1.7. References

Connelly, J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to manage sage-grouse populations and their habitats. Wildl. Soc. Bull. 28(4): 967-985.

Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming. Available on the WGFD website.

Holloran, M.J. 1999. Sage Grouse (*Centrocercus urophasianus*) Seasonal Habitat Use Near Casper, Wyoming. M.S. Thesis, University of Wyoming, Laramie, Wyoming.

WGFD (Wyoming Game and Fish Department). 2001. Strategic Habitat Plan for the Casper Region

WGFD. 2003. Determining the Value of Wildlife Associated Recreation per U.S. Bureau of Land Management Field Office Region in Wyoming. Wyoming Game and Fish Department.Wyoming Game and Fish Department (WGFD). 2005c. Table of nongame mammals occurring in the Casper planning area. Input for Casper Resource Management Plan revision. File Name: NG mammals.xls.

WGFD. 2004a. Annual Report Strategic Habitat Plan Accomplishments. 73 pages.

WGFD. 2004b. Atlas of Birds, Mammals, Amphibians and Reptiles in Wyoming. Wildlife Division. July 2004.

WGFD. 2005a. Wyoming Game and Fish Department Basin Management Plans.

WGFD. 2005b. Table of biggame mammals occurring in the Casper planning area. Input for Casper Resource Management Plan revision.

WGFD. 2005c. Table of nongame mammals occurring in the Casper planning area. Input for Casper Resource Management Plan revision. File Name: NG mammals.xls.

WGFD. 2005d. Greater Sage-Grouse Assessment Input to Bureau of Land Management Casper Field Office Resource Management Plan Revision. Microsoft Word File: SageGrouseAssessment.doc.

CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX F

Exception, Modification, and Waiver Criteria

Appendix F
Exception, Modification, and Waiver Criteria

PROCESSING EXCEPTIONS TO SEASONAL RESTRICTIONS

A request for an exception must be initiated in writing by the public land user near the time of conducting the work. As a general rule, the request should be made within 2 weeks of conducting the proposed work. The unpredictability of weather, animal movement and condition, and so on precludes analysis of requests related to wildlife far in advance of the time periods in question. The request is considered as a unique action and is analyzed and documented individually for Resource Management Plan (RMP) and National Environmental Policy Act (NEPA) compliance. Processing includes coordination with the Wyoming Game and Fish Department (WGFD) for seasonal wildlife-based restrictions.

Exceptions to Seasonal Restrictions

Activities within the planning area are managed with a seasonal restriction(s), no surface occupancy (NSO), or a distance restriction for sensitive and crucial habitats. Protective wildlife seasonal restrictions are developed consistent with statewide dates. For example, big game crucial winter ranges are protected from November 15 through April 30. This restriction is not intended to close an area to development, but is in place to protect big game if weather or other habitat needs dictate that it is necessary.

Crucial winter ranges are not off limits to any activity. This is true only when conditions dictate. The Bureau of Land Management (BLM) can and does grant exceptions to seasonal restrictions if the BLM, in consultation with the WGFD, feels that granting an exception would not jeopardize the wildlife population being protected. The BLM uses a set of criteria when considering a request for an exception. Professional judgment plays a key part in the BLM's decisions on whether to grant exceptions. No clear-cut formula exists.

The following section describes some of the factors considered by the BLM when determining whether a request for an exception should be granted.

Factors Considered

1. Resource Concern
   - Animal presence or absence
   - Additional or new resource concerns
   - Potential for increased wildlife accidents or poaching
2. Animal Conditions
   - Physical condition of individual animals (e.g., fat reserves)
   - Local animal population condition (animal density)
   - Potential for additive mortality
   - Likelihood of introduction or increased incidence of disease
   - Likelihood of decreased recruitment/natality
3. Climate/Weather
   - Snow conditions (depth, crusting, longevity)
   - Current and historic local precipitation patterns
   - Current and historical seasonal weather patterns
   - Recent and current wind-chill factors (indication of animals energy use)
   - Duration of condition
   - Short- and long-range forecasts

4. Habitat Condition and Availability
    - Water and forage condition (availability, quality, and quantity)
    - Competition (interspecific, intraspecific)
    - Animal use of available forage
    - Suitable and ample forage immediately available and accessible
5. Spatial Considerations
    - Migration/travel corridors
    - Winter range, foraging, parturition or breeding
    - Topography (plains vs. mountains)
    - Topographic/geographic limitations (barriers)
    - Presence of thermal cover (e.g., protection from wind)
    - Proportion of range impacted
    - Juxtaposition and density of other activities/disturbances in the vicinity
    - Cumulative impacts
6. Timing
    - When proposed activity would occur in the stipulation period
    - Kind and duration of potentially disruptive activity
    - Likelihood of animals habituating to the proposed activity

Modification or Waiver of Lease Stipulations

Title 43 CFR 3101.1-4 establishes procedures for granting modifications or waivers to oil and gas lease stipulations, as stated below:

> *A stipulation included in an oil and gas lease shall be subject to modification or waiver only if the authorized officer determines that the factors leading to its inclusion in the lease have changed sufficiently to make the protection provided by the stipulation no longer justified or if proposed operations would not cause unacceptable impacts. If the authorized officer has determined, prior to lease issuance, that a stipulation involves an issue of major concern to the public, modification or waiver of the stipulation shall be subject to public review for at least a 30-day period. In such cases, the stipulation shall indicate that public review is required before modification or waiver. If subsequent to lease issuance the authorized officer determines that a modification or waiver of a lease term or stipulation is substantial, the modification or waiver shall be subject to public review for at least a 30-day period.*

The modification or waiver of an oil and gas lease stipulation implies that the sensitive resource for which the protective measure was considered is in some way not present in the area or in some way no longer in need of the protective measure. In either case, consideration of a modification or waiver of a lease stipulation would require environmental analysis and may result in an amendment to the land use plan.

CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX G

Land Disposal

Appendix G
Land Disposal

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0001	T.35N.,R.67W.,SEC 4,SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0002	T.35N.,R.67W.,SEC 6,LOT 2,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0003	T.35N.,R.67W.,SEC 6,LOTS 6,7	Disposal	Disposal	Disposal	Disposal	Disposal
CO0003	T.35N.,R.68W.,SEC 1,SENE,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0004	T.35N.,R.67W.,SEC 18,LOTS 3,4,E2,E2SW T.35N.,R.67W.,SEC 19,LOTS 1,2,NE,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0004	T.35N.,R.68W.,SEC 13,E2SW,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0005	T.36N.,R.67W.,SEC 7,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
CO0006	T.36N.,R.67W.,SEC 7,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0007	T.36N.,R.67W.,SEC 8,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0008	T.36N.,R.67W.,SEC 19,LOTS 1,2,3,4,NE, E2W2,N2SE T.36N.,R.67W.,SEC 20,N2N2	Retention	Disposal	Disposal	Disposal	Disposal
CO0008	T.36N.,R.68W.,SEC 13,S2N2,S2 T.36N.,R.68W.,SEC 23,S2N2,N2S2,SWSW T.36N.,R.68W.,SEC 24,N2,N2S2,SESE T.36N.,R.68W.,SEC 26,W2NW	Retention	Disposal	Disposal	Disposal	Disposal
CO0009	T.36N.,R.67W.,SEC 20,NESW,NWSE	Retention	Disposal	Disposal	Disposal	Disposal
CO0010	T.36N.,R.67W.,SEC 21,SESW,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0011	T.36N.,R.67W.,SEC 29,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0012	T.32N.,R.68W.,SEC 1,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0013	T.32N.,R.68W.,SEC 2,LOT 2,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0014	T.32N.,R.68W.,SEC 2,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0015	T.33N.,R.68W.,SEC 2,LOTS 3,4 T.33N.,R.68W.,SEC 3,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0015	T.34N.,R.68W.,SEC 34,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0016	T.33N.,R.68W.,SEC 2,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0017	T.33N.,R.68W.,SEC 4,SW T.33N.,R.68W.,SEC 5,SE T.33N.,R.68W.,SEC 9,N2NW,SENW,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0018	T.33N.,R.68W.,SEC 19,SWNE,SENW,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0019	T.33N.,R.68W.,SEC 20,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0020	T.33N.,R.68W.,SEC 28,NESW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0021	T.33N.,R.68W.,SEC 31,LOT 4,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0022	T.33N.,R.68W.,SEC 31,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0023	T.33N.,R.68W.,SEC 33,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0024	T.34N.,R.68W.,SEC 2,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0025	T.34N.,R.68W.,SEC 20,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0026	T.34N.,R.68W.,SEC 24,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0027	T.34N.,R.68W.,SEC 27,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0028	T.34N.,R.68W.,SEC 29,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0029	T.34N.,R.68W.,SEC 34,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0030	T.35N.,R.68W.,SEC 1,S2SW T.35N.,R.68W.,SEC 10,SE T.35N.,R.68W.,SEC 11,N2,SW,N2SE,SWSE T.35N.,R.68W.,SEC 12,NWNE,N2NW T.35N.,R.68W.,SEC 14,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0031	T.35N.,R.68W.,SEC 10,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0032	T.35N.,R.68W.,SEC 21,SESW T.35N.,R.68W.,SEC 28,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0033	T.35N.,R.68W.,SEC 23,SW T.35N.,R.68W.,SEC 26,W2E2,E2W2,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0034	T.35N.,R.68W.,SEC 24,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0035	T.35N.,R.68W.,SEC 24,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0036	T.35N.,R.68W.,SEC 25,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0037	T.36N.,R.68W.,SEC 7,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0038	T.36N.,R.68W.,SEC 7,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0039	T.36N.,R.68W.,SEC 11,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0040	T.36N.,R.68W.,SEC 15,E2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0041	T.36N.,R.68W.,SEC 26,S2SW	Retention	Disposal	Disposal	Disposal	Disposal
CO0042	T.36N.,R.68W.,SEC 27,N2SE,SWSE	Retention	Disposal	Disposal	Disposal	Disposal
CO0043	T.36N.,R.68W.,SEC 33,N2NE,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0044	T.36N.,R.68W.,SEC 34,S2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0045	T.31N.,R.69W.,SEC 11,S2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0046	T.31N.,R.69W.,SEC 34,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0047	T.32N.,R.69W.,SEC 3,S2SW T.32N.,R.69W.,SEC 10,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0048	T.32N.,R.69W.,SEC 5,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0049	T.32N.,R.69W.,SEC 9,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0050	T.33N.,R.69W.,SEC 22,SWSE T.33N.,R.69W.,SEC 27,N2NE,NENW	Restricted	Restricted	Restricted	Restricted	Restricted
CO0051	T.33N.,R.69W.,SEC 25,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0052	T.33N.,R.69W.,SEC 25,SESW,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0053	T.33N.,R.69W.,SEC 26,NENW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0054	T.33N.,R.69W.,SEC 29,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0055	T.33N.,R.69W.,SEC 33,NESE T.33N.,R.69W.,SEC 34,W2NW,N2SW,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0056	T.35N.,R.69W.,SEC 34,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0057	T.36N.,R.69W.,SEC 1,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0058	T.36N.,R.69W.,SEC 4,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0059	T.36N.,R.69W.,SEC 11,W2NE,N2SE,SESE T.36N.,R.69W.,SEC 12,SW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0060	T.36N.,R.69W.,SEC 17,S2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0061	T.36N.,R.69W.,SEC 19,LOT 2,E2NE,SWNE,SENW,NESW,N2SE T.36N.,R.69W.,SEC 20,SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0062	T.37N.,R.69W.,SEC 2,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
CO0063	T.37N.,R.69W.,SEC 10,S2SW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0064	T.37N.,R.69W.,SEC 24,N2N2,SENE,E2SE,SWSE T.37N.,R.69W.,SEC 25,N2,E2SW,SE	Retention	Disposal	Disposal	Disposal	Disposal
CO0065	T.37N.,R.69W.,SEC 33,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0066	T.37N.,R.69W.,SEC 34,E2E2 T.37N.,R.69W.,SEC 35,W2E2,W2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0067	T.30N.,R.70W.,SEC 6,LOT 3,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0068	T.30N.,R.70W.,SEC 6,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0069	T.30N.,R.70W.,SEC 6,SWSE T.30N.,R.70W.,SEC 7,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0070	T.31N.,R.70W.,SEC 12,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0071	T.31N.,R.70W.,SEC 13,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0072	T.31N.,R.70W.,SEC 29,W2SE T.31N.,R.70W.,SEC 32,NE T.31N.,R.70W.,SEC 33,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0073	T.31N.,R.70W.,SEC 30,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0074	T.31N.,R.70W.,SEC 31,LOTS 1,2,3,4,E2W2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0075	T.31N.,R.70W.,SEC 31,NENE T.31N.,R.70W.,SEC 32,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0076	T.31N.,R.70W.,SEC 31,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0077	T.31N.,R.70W.,SEC 32,SESW,S2SE T.31N.,R.70W.,SEC 33,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0078	T.31N.,R.70W.,SEC 34,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0079	T.32N.,R.70W.,SEC 13,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0080	T.32N.,R.70W.,SEC 24,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0081	T.32N.,R.70W.,SEC 31,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0082	T.32N.,R.70W.,SEC 33,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0083	T.32N.,R.70W.,SEC 35,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0084	T.33N.,R.70W.,SEC 31,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0085	T.34N.,R.70W.,SEC 7,LOT 4,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0086	T.35N.,R.70W.,SEC 21,NE,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0087	T.36N.,R.70W.,SEC 4,LOTS 1,2,S2NE,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0088	T.36N.,R.70W.,SEC 14,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0089	T.28N.,R.71W.,SEC 9,BLOCK 1,LOTS 6-10 T.28N.,R.71W.,SEC 9,BLOCK 2,LOTS 6-9,11-15 T.28N.,R.71W.,SEC 9,BLOCK 3,LOTS 6-15 T.28N.,R.71W.,SEC 9,BLOCK 4,LOTS 3-5,12-18 T.28N.,R.71W.,SEC 9,BLOCK 5,LOTS 1-13 T.28N.,R.71W.,SEC 9,BLOCK 6,LOTS 1-19 T.28N.,R.71W.,SEC 9,BLOCK 7,LOTS 1-4,21,23-30	Restricted	Restricted	Restricted	Restricted	Restricted
CO0090	T.28N.,R.71W.,SEC 17,N2NW,SWNW T.28N.,R.71W.,SEC 18,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0091	T.28N.,R.71W.,SEC 20,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0092	T.29N.,R.71W.,SEC 2,LOTS 1,2,S2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0093	T.30N.,R.71W.,SEC 1,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
CO0094	T.30N.,R.71W.,SEC 14,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0095	T.31N.,R.71W.,SEC 4,LOT 12,W2SW,SESW T.31N.,R.71W.,SEC 5,LOTS 7,8 T.31N.,R.71W.,SEC 9,NWNE,N2NW	Restricted	Restricted	Restricted	Disposal	Disposal
CO0096	T.31N.,R.71W.,SEC *,TR 73A (SECTIONS 8 & 17)	Disposal	Disposal	Disposal	Disposal	Disposal
CO0097	T.31N.,R.71W.,SEC 19,LOT 5 T.31N.,R.71W.,SEC 20,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0098	T.31N.,R.71W.,SEC 15,LOT 5 T.31N.,R.71W.,SEC 16,LOT 1 T.31N.,R.71W.,SEC 22,LOTS 2,3,6	Disposal	Disposal	Disposal	Disposal	Disposal
CO0099	T.31N.,R.71W.,SEC 15,LOT 4 T.31N.,R.71W.,SEC 22,LOT 1 T.31N.,R.71W.,SEC 23,N2NW,SWNW	Restricted	Restricted	Restricted	Disposal	Disposal
CO0100	T.32N.,R.71W.,SEC 5,LOT 17	Restricted	Restricted	Restricted	Disposal	Disposal
CO0101	T.32N.,R.71W.,SEC 14,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0102	T.32N.,R.71W.,SEC 27,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0103	T.32N.,R.71W.,SEC 27,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0104	T.32N.,R.71W.,SEC 34,SWNW,NWSW,SESW	Sold	Sold	Sold	Sold	Sold
CO0105	T.33N.,R.71W.,SEC 6,LOTS 4,5	Disposal	Disposal	Disposal	Disposal	Disposal
CO0106	T.34N.,R.71W.,SEC 4,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0107	T.34N.,R.71W.,SEC 22,NWNE,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0108	T.34N.,R.71W.,SEC 27,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0109	T.34N.,R.71W.,SEC 33,SENE	Retention PWR 107	Retention PWR 107	Retention PWR 107	Retention PWR 107	Retention PWR 107
CO0110	T.35N.,R.71W.,SEC 5,SENW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G – Land Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0111	T.35N.,R.71W.,SEC 5,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0112	T.35N.,R.71W.,SEC 18,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0113	T.35N.,R.71W.,SEC 31,LOTS 1,2,3,4,NWNE,E2NW,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0114	T.36N.,R.71W.,SEC 4,LOTS 3,4,S2NW T.36N.,R.71W.,SEC 5,LOTS 1,2,3,4,S2N2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0114	T.37N.,R.71W.,SEC 31,E2E2 T.37N.,R.71W.,SEC 32,W2 T.37N.,R.71W.,SEC 33,SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0115	T.36N.,R.71W.,SEC 12,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0116	T.36N.,R.71W.,SEC 31,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0117	T.37N.,R.71W.,SEC 28,S2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0118	T.28N.,R.72W.,SEC 2,LOT 1,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0119	T.28N.,R.72W.,SEC 6,LOTS 1,2,3,4,5,6,S2NE,SENW	Retention	Retention	Disposal	Disposal	Disposal
CO0119	T.29N.,R.72W.,SEC 17,W2SW T.29N.,R.72W.,SEC 18,W2SE,SESE T.29N.,R.72W.,SEC 19,LOTS 2,3,4,5,6,7,8,9,10,11,12,13,E2NW,SESE T.29N.,R.72W.,SEC 20,LOTS 1,2,3,4,5,6,7,8,9,S2NE,SWSW,S2SE T.29N.,R.72W.,SEC 21,LOTS 4,5,NWNE,E2NW,SWNW T.29N.,R.72W.,SEC 21,LOTS 4,5,NWNE,E2NW,SWNW T.29N.,R.72W.,SEC 21,LOTS 4,5,NWNE,E2NW,SWNW T.29N.,R.72W.,SEC 21,LOTS 4,5,NWNE,E2NW,SWNW T.29N.,R.72W.,SEC 28,NWNW T.29N.,R.72W.,SEC 29,LOTS 1,2,3,S2NE,SENW T.29N.,R.72W.,SEC 30,LOTS 1,2,3,4,5,6,7,S2NE,SENW T.29N.,R.72W.,SEC 31,LOTS 1,2,3,4,5,6,7,8,NENE,E2SW	Retention	Retention	Disposal	Disposal	Disposal
CO0119	T.29N.,R.73W.,SEC 24,SESW,E2SE,SWSE T.29N.,R.73W.,SEC 25,E2,E2W2,SWNW,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0120	T.29N.,R.72W.,SEC 1,NESW	Retention	Retention	Disposal	Disposal	Disposal
CO0121	T.29N.,R.72W.,SEC 22,NWNE	Retention	Retention	Disposal	Disposal	Disposal
CO0122	T.29N.,R.72W.,SEC 32,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
CO0123	T.30N.,R.72W.,SEC 7,LOTS 8,9,19	Disposal	Disposal	Disposal	Disposal	Disposal
CO0124	T.30N.,R.72W.,SEC 7,LOT 22	Disposal	Disposal	Disposal	Disposal	Disposal
CO0125	T.30N.,R.72W.,SEC 7,LOTS 32,33	Disposal	Disposal	Disposal	Disposal	Disposal
CO0125	T.30N.,R.72 1/2W.,SEC 12,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0126	T.30N.,R.72W.,SEC 28,SESW T.30N.,R.72W.,SEC 32,NENE T.30N.,R.72W.,SEC 33,S2NE,NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0127	T.30N.,R.72W.,SEC 34,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0128	T.31N.,R.72W.,SEC 12,SWSE,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0129	T.31N.,R.72W.,SEC 20,NESE T.31N.,R.72W.,SEC 21,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0130	T.31N.,R.72W.,SEC 35,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0131	T.32N.,R.72W.,SEC 6,LOT 20	Disposal	Disposal	Disposal	Disposal	Disposal
CO0132	T.33N.,R.72W.,SEC 4,LOTS 6,11,13,14,15	Retention	Retention	Retention	Retention	Retention
CO0133	T.33N.,R.72W.,SEC 6,LOT 11	Disposal	Disposal	Disposal	Disposal	Disposal
CO0134	T.33N.,R.72W.,SEC 15,SWNE,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0135	T.33N.,R.72W.,SEC 16,SWNW,N2SW T.33N.,R.72W.,SEC 17,E2SW,SE T.33N.,R.72W.,SEC 20,E2NE,NESE	Retention	Retention	Disposal	Disposal	Disposal
CO0136	T.33N.,R.72W.,SEC 21,SWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0137	T.33N.,R.72W.,SEC 27,SENE	Retention	Retention	Disposal	Disposal	Disposal
CO0138	T.33N.,R.72W.,SEC 27,N2NW,SWNW	Retention	Retention	Disposal	Disposal	Disposal
CO0139	T.34N.,R.72W.,SEC 13,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0140	T.34N.,R.72W.,SEC 14,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0141	T.34N.,R.72W.,SEC 15,S2SW,SWSE T.34N.,R.72W.,SEC 19,LOTS 2,3,E2SW,S2SE T.34N.,R.72W.,SEC 20,SWSW T.34N.,R.72W.,SEC 21,NE,S2S2 T.34N.,R.72W.,SEC 22,NW,W2SW T.34N.,R.72W.,SEC 28,ALL T.34N.,R.72W.,SEC 29,ALL T.34N.,R.72W.,SEC 33,N2,SW	Retention	Retention	Retention	Retention	Retention
CO0142	T.35N.,R.72W.,SEC 4,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0143	T.35N.,R.72W.,SEC 12,E2NE,SWNE,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0144	T.36N.,R.72W.,SEC 1,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0145	T.36N.,R.72W.,SEC 1,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0146	T.36N.,R.72W.,SEC 3,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0147	T.36N.,R.72W.,SEC 4,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0148	T.36N.,R.72W.,SEC 6,LOTS 2,3	Disposal	Disposal	Disposal	Disposal	Disposal
CO0148	T.37N.,R.72W.,SEC 31,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0149	T.36N.,R.72W.,SEC 7,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0149	T.36N.,R.73W.,SEC 12,E2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0150	T.36N.,R.72W.,SEC 8,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0151	T.36N.,R.72W.,SEC 17,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0152	T.36N.,R.72W.,SEC 23,S2S2 T.36N.,R.72W.,SEC 26,N2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0153	T.36N.,R.72W.,SEC 25,N2SE,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0154	T.37N.,R.72W.,SEC 10,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0155	T.37N.,R.72W.,SEC 17,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0156	T.37N.,R.72W.,SEC 20,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0157	T.37N.,R.72W.,SEC 21,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0158	T.37N.,R.72W.,SEC 22,SESW	Disposal	Disposal	Disposal	Disposal	Disposal

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Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0159	T.37N.,R.72W.,SEC 28,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0160	T.37N.,R.72W.,SEC 32,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0161	T.37N.,R.72W.,SEC 34,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0162	T.29N.,R.72 1/2W.,SEC 1,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0163	T.30N.,R.72 1/2W.,SEC 13,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0164	T.32N.,R.72 1/2W.,SEC 24,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
CO0165	T.29N.,R.73W.,SEC 2,LOTS 3,4,SWNW T.29N.,R.73W.,SEC 3,SENE,NESE	Retention	Retention	Disposal	Disposal	Disposal
CO0165	T.30N.,R.73W.,SEC 35,SWSW	Retention	Retention	Disposal	Disposal	Disposal
CO0166	T.29N.,R.73W.,SEC 3,SWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0167	T.30N.,R.73W.,SEC 7,W2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0168	T.30N.,R.73W.,SEC 11,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0169	T.30N.,R.73W.,SEC 14,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0170	T.30N.,R.73W.,SEC 18,NENW	Retention	Retention	Disposal	Disposal	Disposal
CO0171	T.30N.,R.73W.,SEC 19,N2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0172	T.30N.,R.73W.,SEC 22,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0173	T.30N.,R.73W.,SEC 27,S2SE T.30N.,R.73W.,SEC 34,E2NE	Retention	Retention	Disposal	Disposal	Disposal
CO0174	T.30N.,R.73W.,SEC 34,NWNW	Retention	Retention	Disposal	Disposal	Disposal
CO0175	T.31N.,R.73W.,SEC 6,LOT 6,NESW	Retention	Retention	Disposal	Disposal	Disposal
CO0176	T.32N.,R.73W.,SEC 18,SWNE,SE T.32N.,R.73W.,SEC 19,E2 T.32N.,R.73W.,SEC 20,S2 T.32N.,R.73W.,SEC 28,W2NW T.32N.,R.73W.,SEC 29,N2NE	Retention	Retention	Disposal	Disposal	Disposal
CO0177	T.32N.,R.73W.,SEC 21,NENE	Retention	Retention	Disposal	Disposal	Disposal
CO0178	T.32N.,R.73W.,SEC 21,SWNW	Retention	Retention	Disposal	Disposal	Disposal
CO0179	T.32N.,R.73W.,SEC 21,SESE T.32N.,R.73W.,SEC 22,S2SW,SWSE T.32N.,R.73W.,SEC 27,NWNE,N2NW T.32N.,R.73W.,SEC 28,NENE	Retention	Retention	Disposal	Disposal	Disposal
CO0180	T.32N.,R.73W.,SEC 30,LOTS 2,3	Disposal	Disposal	Disposal	Disposal	Disposal
CO0181	T.33N.,R.73W.,SEC 1,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0182	T.33N.,R.73W.,SEC 1,LOTS 18,23	Retention	Retention	Disposal	Disposal	Disposal
CO0183	T.33N.,R.73W.,SEC 21,NENE T.33N.,R.73W.,SEC 22,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0184	T.34N.,R.73W.,SEC 3,LOTS 2,3,4	Retention	Retention	RETENITON	Retention	Retention
CO0184	T.35N.,R.73W.,SEC 34,W2SW,SESW	Retention	Retention	Retention	Retention	Retention
CO0185	T.34N.,R.73W.,SEC 5,NESW,W2SE	Retention	Disposal	Disposal	Disposal	Disposal
CO0186	T.34N.,R.73W.,SEC 12,W2SE T.34N.,R.73W.,SEC 13,E2,E2SW	Retention	Retention	Retention	Retention	Retention

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0187	T.34N.,R.73W.,SEC 21,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0188	T.35N.,R.73W.,SEC 5,SWNW,SW T.35N.,R.73W.,SEC 6,LOTS 1,2,3,4,5,6,S2NE,SENW,NESW,N2SE,SESE T.35N.,R.73W.,SEC 8,N2NE,SWNE,W2,W2SE	Retention	Retention	Retention	Retention	Retention
CO0188	T.35N.,R.74W.,SEC 1,LOTS 1,2,3,4,S2NE,SE T.35N.,R.74W.,SEC 2,LOTS 1,2,3,4 T.35N.,R.74W.,SEC 12,N2NE,SENE	Retention	Retention	Retention	Retention	Retention
CO0188	T.36N.,R.74W.,SEC 22,E2 T.36N.,R.74W.,SEC 25,W2 T.36N.,R.74W.,SEC 26,ALL T.36N.,R.74W.,SEC 27,E2 T.36N.,R.74W.,SEC 35,ALL	Retention	Retention	Retention	Retention	Retention
CO0189	T.35N.,R.73W.,SEC 17,E2SW,SWSW T.35N.,R.73W.,SEC 18,LOTS 3,4,E2SW,SE T.35N.,R.73W.,SEC 20,W2,S2SE	Retention	Retention	Retention	Retention	Retention
CO0190	T.35N.,R.73W.,SEC 31,N2SE,SWSE T.35N.,R.73W.,SEC 32,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0191	T.36N.,R.73W.,SEC 5,LOTS 1,2,S2NE	Retention	Retention	Disposal	Disposal	Disposal
CO0191	T.37N.,R.73W.,SEC 2,LOTS 3,4,S2NW,N2SW T.37N.,R.73W.,SEC 3,LOTS 1,2,S2N2,N2S2 T.37N.,R.73W.,SEC 4,S2NE,E2SW,N2SE,SWSE T.37N.,R.73W.,SEC 8,SE T.37N.,R.73W.,SEC 9,W2E2,W2 T.37N.,R.73W.,SEC 17,E2 T.37N.,R.73W.,SEC 20,E2 T.37N.,R.73W.,SEC 29,E2 T.37N.,R.73W.,SEC 32,E2 T.37N.,R.73W.,SEC 33,ALL T.37N.,R.73W.,SEC 34,SWSW	Retention	Retention	Disposal	Disposal	Disposal
CO0192	T.36N.,R.73W.,SEC 6,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
CO0193	T.36N.,R.73W.,SEC 9,NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0194	T.36N.,R.73W.,SEC 12,SESE LESS PAT MC	Disposal	Disposal	Disposal	Disposal	Disposal
CO0195	T.36N.,R.73W.,SEC 13,NWSW LESS PAT MC	Disposal	Disposal	Disposal	Disposal	Disposal
CO0196	T.36N.,R.73W.,SEC 23,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0197	T.36N.,R.73W.,SEC 26,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0198	T.36N.,R.73W.,SEC 34,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0199	T.37N.,R.73W.,SEC 7,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0200	T.37N.,R.73W.,SEC 11,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0201	T.37N.,R.73W.,SEC 13,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0202	T.37N.,R.73W.,SEC 31,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
CO0203	T.29N.,R.74W.,SEC 6,LOTS 5,6	Disposal	Disposal	Disposal	Disposal	Disposal

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Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0204	T.29N.,R.74W.,SEC 20,E2NE T.29N.,R.74W.,SEC 21,NW,NWSW	Retention	Retention	Disposal	Disposal	Disposal
CO0205	T.29N.,R.74W.,SEC 26,E2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0206	T.29N.,R.74W.,SEC 28,SWSW	Retention	Retention	Disposal	Disposal	Disposal
CO0207	T.29N.,R.74W.,SEC 28,SESE	Retention	Retention	Disposal	Disposal	Disposal
CO0208	T.30N.,R.74W.,SEC 7,LOT 4,SESW,S2SE T.30N.,R.74W.,SEC 18,N2NE	Retention	Retention	Disposal	Disposal	Disposal
CO0209	T.30N.,R.74W.,SEC 7,S2NE T.30N.,R.74W.,SEC 8,N2NE,SWNE,NW,N2SW	Retention	Retention	Disposal	Disposal	Disposal
CO0210	T.30N.,R.74W.,SEC 17,SENE	Retention	Retention	Disposal	Disposal	Disposal
CO0211	T.30N.,R.74W.,SEC 17,N2SW,NWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0212	T.30N.,R.74W.,SEC 18,LOTS 2,3,4,E2SW,NWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0213	T.30N.,R.74W.,SEC 24,S2NE,SENW,E2SW,SE T.30N.,R.74W.,SEC 25,N2NE,SWNE,E2NW,SW,S2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0214	T.30N.,R.74W.,SEC 33,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0215	T.31N.,R.74W.,SEC 6,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0216	T.31N.,R.74W.,SEC 10,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0217	T.32N.,R.74W.,SEC **,TR 46 (SEC 3)	Disposal	Disposal	Disposal	Disposal	Disposal
CO0218	T.32N.,R.74W.,SEC 1,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
CO0219	T.33N.,R.74W.,SEC 32,SWSE	Restricted	Restricted	Restricted	Restricted	Restricted
CO0219	T.32N.,R.74W.,SEC 5,LOTS 6,7,8,10 T.32N.,R.74W.,SEC 6,LOTS 22,23,24,25,26,27,28	Restricted	Restricted	Restricted	Restricted	Restricted
CO0220	T.32N.,R.74W.,SEC 5,LOTS 9,11 T.32N.,R.74W.,SEC 7,N2NE T.32N.,R.74W.,SEC 8,N2N2 T.32N.,R.74W.,SEC 9,NWNW	Restricted	Restricted	Restricted	Restricted	Restricted
CO0221	T.32N.,R.74W.,SEC 8,SESE T.32N.,R.74W.,SEC 9,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0222	T.32N.,R.74W.,SEC 14,SWNW,W2SW T.32N.,R.74W.,SEC 15,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0223	T.32N.,R.74W.,SEC 15,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0224	T.32N.,R.74W.,SEC 24,NENE	Retention	Retention	Disposal	Disposal	Disposal
CO0225	T.33N.,R.74W.,SEC 2,SWSW	Restricted	Restricted	Restricted	Disposal	Disposal
CO0226	T.33N.,R.74W.,SEC 5,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0227	T.33N.,R.74W.,SEC 9,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0228	T.34N.,R.74W.,SEC 3,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0228	T.35N.,R.74W.,SEC 34,S2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0229	T.34N.,R.74W.,SEC 4,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
CO0230	T.34N.,R.74W.,SEC 22,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0231	T.34N.,R.74W.,SEC 25,S2NW,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0232	T.34N.,R.74W.,SEC 26,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal

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Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0233	T.35N.,R.74W.,SEC 19,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
CO0234	T.35N.,R.74W.,SEC 21,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0235	T.35N.,R.74W.,SEC 27,NE,N2NW,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0236	T.35N.,R.74W.,SEC 29,N2,N2SW,SWSW,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0237	T.36N.,R.74W.,SEC 3,LOTS 3,4	Retention	Retention	Disposal	Disposal	Disposal
CO0238	T.36N.,R.74W.,SEC 5,SWNW,NWSW T.36N.,R.74W.,SEC 6,SENE,NESE	Retention	Retention	Disposal	Disposal	Disposal
CO0239	T.36N.,R.74W.,SEC 7,NENE T.36N.,R.74W.,SEC 8,N2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0240	T.36N.,R.74W.,SEC 7,SWNE	Retention	Retention	Disposal	Disposal	Disposal
CO0241	T.36N.,R.74W.,SEC 7,NESE T.36N.,R.74W.,SEC 8,N2SW	Retention	Retention	Disposal	Disposal	Disposal
CO0242	T.36N.,R.74W.,SEC 17,SENE	Retention	Retention	Disposal	Disposal	Disposal
CO0243	T.36N.,R.74W.,SEC 21,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0244	T.36N.,R.74W.,SEC 29,NE,SENW,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0245	T.36N.,R.74W.,SEC 33,N2 T.36N.,R.74W.,SEC 34,W2NW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0246	T.37N.,R.74W.,SEC 8,SWNW,W2SW	Retention	Retention	Disposal	Disposal	Disposal
CO0247	T.37N.,R.74W.,SEC 10,S2SE T.37N.,R.74W.,SEC 14,NW,N2SW,SWSW T.37N.,R.74W.,SEC 15,ALL T.37N.,R.74W.,SEC 22,NE T.37N.,R.74W.,SEC 23,NWNW	Retention	Retention	Retention	Retention	Retention
CO0248	T.37N.,R.74W.,SEC 13,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0249	T.37N.,R.74W.,SEC 13,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0250	T.37N.,R.74W.,SEC 19,N2NE,NENW T.37N.,R.74W.,SEC 20,N2N2	Retention	Retention	Disposal	Disposal	Disposal
CO0251	T.37N.,R.74W.,SEC 20,NWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0252	T.37N.,R.74W.,SEC 23,S2SW,SE T.37N.,R.74W.,SEC 26,W2,W2SE T.37N.,R.74W.,SEC 27,E2E2,SWSE T.37N.,R.74W.,SEC 35,W2NE,NW	Retention	Retention	Retention	Retention	Retention
CO0253	T.37N.,R.74W.,SEC 30,LOTS 3,4,E2SW,SWSE T.37N.,R.74W.,SEC 31,LOT 1,NWNE,NENW	Retention	Retention	Disposal	Disposal	Disposal
CO0254	T.38N.,R.74W.,SEC 1,LOTS 1,2,3,4,S2N2,S2 T.38N.,R.74W.,SEC 2,LOTS 1,2,3,4,S2N2,E2SW,SE T.38N.,R.74W.,SEC 3,LOTS 1,2,3,4,S2N2 T.38N.,R.74W.,SEC 11,N2NE,NENW	Restricted	Restricted	Retention	Retention	Retention
CO0254	T.39N.,R.74W.,SEC 34,E2,E2NW,SWNW,SW T.39N.,R.74W.,SEC 35,ALL	Retention	Retention	Retention	Retention	Retention
CO0255	T.38N.,R.74W.,SEC 6,LOT 7	Disposal	Disposal	Disposal	Disposal	Disposal

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Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0256	T.38N.,R.74W.,SEC 7,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
CO0257	T.38N.,R.74W.,SEC 8,E2NE,SWNE,SENW,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0258	T.38N.,R.74W.,SEC 11,NESE	Restricted	Restricted	Restricted	Retention	Retention
CO0259	T.38N.,R.74W.,SEC 12,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0260	T.38N.,R.74W.,SEC 24,E2,E2W2	Retention	Retention	Retention	Retention	Retention
CO0261	T.38N.,R.74W.,SEC 26,E2 T.38N.,R.74W.,SEC 35,E2	Retention	Retention	Retention	Retention	Retention
CO0262	T.39N.,R.74W.,SEC 1,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0263	T.39N.,R.74W.,SEC 2,NWSW T.39N.,R.74W.,SEC 3,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0264	T.39N.,R.74W.,SEC 3,SWSE T.39N.,R.74W.,SEC 10,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0265	T.39N.,R.74W.,SEC 4,SESE	Restricted	Restricted	Restricted	Restricted	Restricted
CO0266	T.39N.,R.74W.,SEC 6,LOTS 1,2,3,4,5,6,S2NE,SENW,E2SW,N2SE	Retention	Retention	Retention	Retention	Retention
CO0266	T.40N.,R.74W.,SEC 30,LOTS 1,2,3,4,E2W2 T.40N.,R.74W.,SEC 31,LOTS 1,2,3,4,E2,E2W2	Retention	Retention	Retention	Retention	Retention
CO0266	T.40N.,R.75W.,SEC 14,S2NW,SW T.40N.,R.75W.,SEC 15,S2NE,SE T.40N.,R.75W.,SEC 22,E2 T.40N.,R.75W.,SEC 23,NWNE,NENW,W2W2,NESW,SE T.40N.,R.75W.,SEC 24,SW,W2SE T.40N.,R.75W.,SEC 25,N2 T.40N.,R.75W.,SEC 26,N2NE	Retention	Retention	Retention	Retention	Retention
CO0267	T.39N.,R.74W.,SEC 8,N2NE,SENE,NENW	Restricted	Restricted	Restricted	Restricted	Restricted
CO0268	T.39N.,R.74W.,SEC 9,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0269	T.39N.,R.74W.,SEC 19,NE T.39N.,R.74W.,SEC 20,ALL T.39N.,R.74W.,SEC 21,SW T.39N.,R.74W.,SEC 28,N2 T.39N.,R.74W.,SEC 29,NE	Retention	Retention	Retention	Retention	Retention
CO0270	T.39N.,R.74W.,SEC 27,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0271	T.39N.,R.74W.,SEC 28,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0272	T.40N.,R.74W.,SEC 10,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0273	T.40N.,R.74W.,SEC 11,S2NE,N2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0274	T.40N.,R.74W.,SEC 12,SWSE T.40N.,R.74W.,SEC 13,W2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0275	T.40N.,R.74W.,SEC 14,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0276	T.40N.,R.74W.,SEC 17,S2NW,S2 T.40N.,R.74W.,SEC 18,LOTS 3,4,E2SW,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0277	T.40N.,R.74W.,SEC 33,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0278	T.40N.,R.74W.,SEC 34,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0279	T.40N.,R.74W.,SEC 34,E2SW,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0280	T.41N.,R.74W.,SEC 33,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0281	T.30N.,R.75W.,SEC 2,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0282	T.31N.,R.75W.,SEC 13,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0283	T.32N.,R.75W.,SEC 2,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0284	T.32N.,R.75W.,SEC 6,LOT 11	Disposal	Disposal	Disposal	Disposal	Disposal
CO0285	T.32N.,R.75W.,SEC 17,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0286	T.34N.,R.75W.,SEC 4,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0287	T.34N.,R.75W.,SEC 6,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0288	T.34N.,R.75W.,SEC 7,SESW T.34N.,R.75W.,SEC 18,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0289	T.34N.,R.75W.,SEC 12,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0290	T.35N.,R.75W.,SEC 17,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0291	T.35N.,R.75W.,SEC 18,LOTS 3,4,E2SW T.35N.,R.75W.,SEC 19,LOTS 1,2,3,4,E2W2,W2SE,SESE T.35N.,R.75W.,SEC 30,LOTS 1,2,NE,E2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0291	T.35N.,R.76W.,SEC 2,S2 T.35N.,R.76W.,SEC 3,LOTS 1,2,3,4,S2N2,S2 T.35N.,R.76W.,SEC 10,ALL T.35N.,R.76W.,SEC 11,ALL T.35N.,R.76W.,SEC 12,SWSW T.35N.,R.76W.,SEC 13,W2NW,SENW,S2 T.35N.,R.76W.,SEC 14,NESE T.35N.,R.76W.,SEC 24,ALL T.35N.,R.76W.,SEC 25,E2	Retention	Retention	Disposal	Disposal	Disposal
CO0291	T.36N.,R.76W.,SEC 28,SWNE,S2 T.36N.,R.76W.,SEC 33,NE,N2SE,SWSE T.36N.,R.76W.,SEC 34,W2NW,SENW,SW,W2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0292	T.36N.,R.75W.,SEC 1,S2NW,N2SW	Retention	Retention	Disposal	Disposal	Disposal
CO0293	T.36N.,R.75W.,SEC 1,SWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0294	T.36N.,R.75W.,SEC 2,SWNE,SENW,E2SW,NWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0295	T.36N.,R.75W.,SEC 3,LOT 3 T.36N.,R.75W.,SEC 4,LOTS 5,6 T.36N.,R.75W.,SEC 5,LOTS 1,2,3,4,S2N2,S2 T.36N.,R.75W.,SEC 6,LOTS 5,6,7,S2NE,SENW,E2SW T.36N.,R.75W.,SEC 7,LOTS 1,2,3,4,E2W2 T.36N.,R.75W.,SEC 8,W2	Retention	Retention	Disposal	Disposal	Disposal
CO0295	T.37N.,R.75W.,SEC 33,ALL T.37N.,R.75W.,SEC 34,S2NE,W2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0295	T.36N.,R.76W.,SEC 12,E2	Retention	Retention	Disposal	Disposal	Disposal
CO0296	T.36N.,R.75W.,SEC 11,NWNW	Retention	Retention	Disposal	Disposal	Disposal
CO0297	T.36N.,R.75W.,SEC 12,NESW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G – Land Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0298	T.36N.,R.75W.,SEC 17,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0299	T.36N.,R.75W.,SEC 17,E2SW T.36N.,R.75W.,SEC 20,SWNE,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0300	T.36N.,R.75W.,SEC 19,LOT 4,E2SW,SE T.36N.,R.75W.,SEC 29,N2 T.36N.,R.75W.,SEC 30,LOTS 1,2,3,4,E2,E2W2 T.36N.,R.75W.,SEC 31,LOTS 1,2,NE,E2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0300	T.36N.,R.76W.,SEC 24,S2SE T.36N.,R.76W.,SEC 25,E2,SENW,NESW	Retention	Retention	Disposal	Disposal	Disposal
CO0301	T.37N.,R.75W.,SEC 4,SENE,SESW,N2SE,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0302	T.37N.,R.75W.,SEC 5,LOTS 2,3,4,S2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0302	T.38N.,R.75W.,SEC 32,W2E2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0303	T.37N.,R.75W.,SEC 7,LOTS 3,4,S2NE,E2SW,W2SE T.37N.,R.75W.,SEC 8,S2N2 T.37N.,R.75W.,SEC 18,LOTS 1,2,W2NE,SENE,E2NW,N2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0303	T.37N.,R.76W.,SEC 11,SESE T.37N.,R.76W.,SEC 12,S2 T.37N.,R.76W.,SEC 13,N2,NWSW T.37N.,R.76W.,SEC 14,ALL T.37N.,R.76W.,SEC 15,NENE,S2N2 T.37N.,R.76W.,SEC 19,LOTS 1,2,3,4,E2,E2W2 T.37N.,R.76W.,SEC 20,ALL T.37N.,R.76W.,SEC 21,ALL T.37N.,R.76W.,SEC 22,S2 T.37N.,R.76W.,SEC 23,N2,SW,N2SE T.37N.,R.76W.,SEC 24,S2NW,N2SW T.37N.,R.76W.,SEC 28,NW T.37N.,R.76W.,SEC 29,E2NE T.37N.,R.76W.,SEC 30,LOTS 1,2,3,4,W2NE,E2W2,SE T.37N.,R.76W.,SEC 31,LOTS 1,2,3,NE,E2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0304	T.37N.,R.75W.,SEC 8,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0305	T.37N.,R.75W.,SEC 12,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0306	T.37N.,R.75W.,SEC 17,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0307	T.37N.,R.75W.,SEC 19,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0308	T.37N.,R.75W.,SEC 19,S2SE T.37N.,R.75W.,SEC 20,SWNW,SW T.37N.,R.75W.,SEC 29,NW,W2SW T.37N.,R.75W.,SEC 30,LOTS 1,2,3,4,E2,E2W2 T.37N.,R.75W.,SEC 31,LOT 1,N2NE,NENW	Retention	Retention	Disposal	Disposal	Disposal
CO0308	T.37N.,R.76W.,SEC 25,E2,S2SW	Retention	Retention	Disposal	Disposal	Disposal
CO0309	T.37N.,R.75W.,SEC 25,NW T.37N.,R.75W.,SEC 26,N2NE,W2	Retention	Retention	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.37N.,R.75W.,SEC 27,N2SE T.37N.,R.75W.,SEC 35,N2NW					
CO0310	T.37N.,R.75W.,SEC 35,SENE	Retention	Retention	Disposal	Disposal	Disposal
CO0311	T.38N.,R.75W.,SEC 5,S2NW T.38N.,R.75W.,SEC 6,LOT 5,S2NE,SENW,NESE	Retention	Retention	Disposal	Disposal	Disposal
CO0311	T.38N.,R.76W.,SEC 1,LOTS 1,2,S2NE	Retention	Retention	Disposal	Disposal	Disposal
CO0312	T.38N.,R.75W.,SEC 7,LOTS 1,2,3,NESW,N2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0312	T.38N.,R.76W.,SEC 12,N2NE,NENW	Retention	Retention	Disposal	Disposal	Disposal
CO0313	T.38N.,R.75W.,SEC 8,SWSE T.38N.,R.75W.,SEC 17,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0314	T.38N.,R.75W.,SEC 9,N2NE,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0315	T.38N.,R.75W.,SEC 10,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0316	T.38N.,R.75W.,SEC 11,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0317	T.38N.,R.75W.,SEC 14,SWNE,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0318	T.38N.,R.75W.,SEC 20,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0319	T.38N.,R.75W.,SEC 28,NE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0320	T.38N.,R.75W.,SEC 29,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0321	T.38N.,R.75W.,SEC 30,LOT 4,SESW T.38N.,R.75W.,SEC 31,LOT 1	Retention	Retention	Disposal	Disposal	Disposal
CO0321	T.38N.,R.76W.,SEC 25,NE,S2NW,N2S2,SESE T.38N.,R.76W.,SEC 26,S2NE,SESW,N2SE,SWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0322	T.38N.,R.75W.,SEC 30,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0323	T.38N.,R.75W.,SEC 33,NESW,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0324	T.39N.,R.75W.,SEC 3,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0325	T.39N.,R.75W.,SEC 3,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0326	T.39N.,R.75W.,SEC 6,LOTS 5,6	Disposal	Disposal	Disposal	Disposal	Disposal
CO0327	T.39N.,R.75W.,SEC 8,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0328	T.39N.,R.75W.,SEC 10,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0329	T.39N.,R.75W.,SEC 15,NESW,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0330	T.39N.,R.75W.,SEC 17,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0331	T.39N.,R.75W.,SEC 17,SWNW,NWSW T.39N.,R.75W.,SEC 18,W2NE,SENE,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0332	T.39N.,R.75W.,SEC 19,LOT 2,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0333	T.39N.,R.75W.,SEC 19,E2NE T.39N.,R.75W.,SEC 20,W2NW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0334	T.39N.,R.75W.,SEC 20,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0335	T.39N.,R.75W.,SEC 23,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0336	T.39N.,R.75W.,SEC 25,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0337	T.39N.,R.75W.,SEC 27,N2NE,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0338	T.39N.,R.75W.,SEC 29,SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0339	T.39N.,R.75W.,SEC 30,W2NE,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0340	T.39N.,R.75W.,SEC 32,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0341	T.39N.,R.75W.,SEC 33,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0342	T.39N.,R.75W.,SEC 34,E2SE,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0343	T.40N.,R.75W.,SEC 5,S2 T.40N.,R.75W.,SEC 6,LOTS 1,2,3,4,5,6,7,S2NE,SENW,E2SW,SE T.40N.,R.75W.,SEC 7,NE T.40N.,R.75W.,SEC 8,N2 T.40N.,R.75W.,SEC 9,N2	Retention	Retention	Retention	Retention	Retention
CO0344	T.40N.,R.75W.,SEC 11,SESE T.40N.,R.75W.,SEC 12,SWSW	Retention	Retention	Disposal	Disposal	Disposal
CO0345	T.40N.,R.75W.,SEC 13,NWSW	Retention	Retention	Disposal	Disposal	Disposal
CO0346	T.40N.,R.75W.,SEC 27,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0347	T.40N.,R.75W.,SEC 31,LOT 1,N2NE,NENW T.40N.,R.75W.,SEC 32,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0348	T.40N.,R.75W.,SEC 34,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0349	T.40N.,R.75W.,SEC 34,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0350	T.40N.,R.75W.,SEC 35,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0351	T.40N.,R.75W.,SEC 35,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0352	T.29N.,R.76W.,SEC 30,LOTS 2,3,4 T.29N.,R.76W.,SEC 31,LOTS 1,2,5,6,7,8,NE,E2W2 T.29N.,R.76W.,SEC 32,LOTS 1,2,3,4,5,6	Retention	Retention	Disposal	Disposal	Disposal
CO0352	T.29N.,R.77W.,SEC 21,SE T.29N.,R.77W.,SEC 25,SENE,S2 T.29N.,R.77W.,SEC 26,S2 T.29N.,R.77W.,SEC 27,SWNE,W2SE T.29N.,R.77W.,SEC 28,N2,SE T.29N.,R.77W.,SEC 32,W2SE,SESE T.29N.,R.77W.,SEC 33,E2NE,S2S2 T.29N.,R.77W.,SEC 34,N2NE,SENE,W2,SE T.29N.,R.77W.,SEC 35,NWNE,W2	Retention	Retention	Disposal	Disposal	Disposal
CO0353	T.29N.,R.76W.,SEC 33,NE,E2NW T.29N.,R.76W.,SEC 34,W2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0354	T.30N.,R.76W.,SEC 11,N2NW,SWNW,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0355	T.30N.,R.76W.,SEC 13,SESW,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0356	T.31N.,R.76W.,SEC 3,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
CO0357	T.31N.,R.76W.,SEC 26,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0358	T.32N.,R.76W.,SEC 2,LOTS 5,6 T.32N.,R.76W.,SEC 11,N2NE	Retention	Retention	Disposal	Disposal	Disposal
CO0359	T.32N.,R.76W.,SEC 13,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0360	T.32N.,R.76W.,SEC 14,SESW T.32N.,R.76W.,SEC 23,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
CO0361	T.32N.,R.76W.,SEC 16,LOTS 5,6	Disposal	Disposal	Disposal	Disposal	Disposal

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Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0362	T.32N.,R.76W.,SEC 6,LOTS 9,10	Disposal	Disposal	Disposal	Disposal	Disposal
CO0363	T.32N.,R.76W.,SEC 24,LOT 7	Disposal	Disposal	Disposal	Disposal	Disposal
CO0364	T.32N.,R.76W.,SEC 36,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0365	T.32N.,R.76W.,SEC 32,LOTS 4,9	Disposal	Disposal	Disposal	Disposal	Disposal
CO0366	T.32N.,R.76W.,SEC 34,LOT 6	Disposal	Disposal	Disposal	Disposal	Disposal
CO0367	T.33N.,R.76W.,SEC 2,SW T.33N.,R.76W.,SEC 3,NESE T.33N.,R.76W.,SEC 11,W2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0368	T.33N.,R.76W.,SEC 7,S2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0369	T.33N.,R.76W.,SEC 18,LOTS 1,2,N2NE,SENE,E2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0369	T.33N.,R.77W.,SEC 11,SESW,E2SE,SWSE T.33N.,R.77W.,SEC 12,SENE,S2 T.33N.,R.77W.,SEC 13,NENE	Retention	Retention	Disposal	Disposal	Disposal
CO0370	T.33N.,R.76W.,SEC 20,N2NE,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0371	T.33N.,R.76W.,SEC 24,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0372	T.34N.,R.76W.,SEC 11,NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0373	T.34N.,R.76W.,SEC 11,W2SW,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0374	T.34N.,R.76W.,SEC 12,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0375	T.34N.,R.76W.,SEC 13,S2NE,E2W2,SE T.34N.,R.76W.,SEC 24,NE,E2NW,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0376	T.34N.,R.76W.,SEC 18,LOTS 1,2,NE,E2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0376	T.34N.,R.77W.,SEC 12,E2W2,NWNW T.34N.,R.77W.,SEC 13,NE,E2NW,SW,NESE T.34N.,R.77W.,SEC 14,S2NE,SE T.34N.,R.77W.,SEC 23,NE T.34N.,R.77W.,SEC 24,NWNE,NW	Retention	Retention	Disposal	Disposal	Disposal
CO0377	T.34N.,R.76W.,SEC 19,LOT 4 T.34N.,R.76W.,SEC 30,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0377	T.34N.,R.77W.,SEC 24,S2SE T.34N.,R.77W.,SEC 25,N2N2,SENW T.34N.,R.77W.,SEC 26,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0378	T.34N.,R.76W.,SEC 20,SENW,N2SW,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0379	T.34N.,R.76W.,SEC 30,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0380	T.34N.,R.76W.,SEC 31,LOTS 3,4,E2SW	Restricted	Restricted	Disposal	Disposal	Disposal
CO0381	T.34N.,R.76W.,SEC 34,SESE	Restricted	Restricted	Disposal	Disposal	Disposal
CO0382	T.36N.,R.76W.,SEC 2,LOTS 3,4,S2NW T.36N.,R.76W.,SEC 3,LOTS 1,2,S2NE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0383	T.36N.,R.76W.,SEC 17,NE	Retention	Retention	Disposal	Disposal	Disposal
CO0384	T.36N.,R.76W.,SEC 18,S2NE,SE T.36N.,R.76W.,SEC 19,NE,N2SE,SWSE T.36N.,R.76W.,SEC 20,NWNW	Retention	Retention	Disposal	Disposal	Disposal

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Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0385	T.36N.,R.76W.,SEC 20,SENE,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0386	T.36N.,R.76W.,SEC 30,NENW	Retention	Retention	Disposal	Disposal	Disposal
CO0387	T.36N.,R.76W.,SEC 31,LOTS 1,2,3,4,E2,E2W2	Retention	Retention	Disposal	Disposal	Disposal
CO0388	T.36N.,R.76W.,SEC 35,N2NW,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0389	T.36N.,R.76W.,SEC 4,S2SW T.36N.,R.76W.,SEC 5,LOTS 2,3,4,SWNE,S2NW,S2 T.36N.,R.76W.,SEC 6,LOTS 6,7,E2SW,SE T.36N.,R.76W.,SEC 7,LOTS 1,2,3,4,N2NE,NENW T.36N.,R.76W.,SEC 7,LOTS 1,2,3,4,N2NE,NENW T.36N.,R.76W.,SEC 8,N2N2,SWNE,SENW,NWSE T.36N.,R.76W.,SEC 9,N2N2 T.36N.,R.76W.,SEC 10,W2 T.36N.,R.76W.,SEC 18,LOTS 1,2	Retention	Retention	Disposal	Retention	Retention
CO0389	T.36N.,R.77W.,SEC 1,LOT 3,SWNE,S2NW,S2 T.36N.,R.77W.,SEC 11,E2E2 T.36N.,R.77W.,SEC 12,ALL T.36N.,R.77W.,SEC 13,N2 T.36N.,R.77W.,SEC 14,N2,SW T.36N.,R.77W.,SEC 15,ALL	Retention	Retention	Disposal	Retention	Retention
CO0390	T.37N.,R.76W.,SEC 2,LOT 3	Retention	Retention	Disposal	Disposal	Disposal
CO0390	T.38N.,R.76W.,SEC 35,E2SW,N2SE,SWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0391	T.37N.,R.76W.,SEC 2,SENE,E2SW,N2SE,SWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0392	T.37N.,R.76W.,SEC 4,SWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0393	T.37N.,R.76W.,SEC 6,LOTS 1,2,3,4,5,6,7,S2NE,SENW,E2SW,SE	Retention	Retention	Disposal	Disposal	Disposal
CO0393	T.38N.,R.76W.,SEC 18,LOTS 3,4,E2SW,SE T.38N.,R.76W.,SEC 19,LOTS 1,2,3,4,E2,E2W2 T.38N.,R.76W.,SEC 20,S2N2,S2 T.38N.,R.76W.,SEC 21,W2,N2SE,SWSE T.38N.,R.76W.,SEC 22,N2S2 T.38N.,R.76W.,SEC 27,W2SW T.38N.,R.76W.,SEC 28,W2NE,W2,SE T.38N.,R.76W.,SEC 29,ALL T.38N.,R.76W.,SEC 30,LOTS 1,2,3,4,E2,E2W2 T.38N.,R.76W.,SEC 31,LOTS 1,2,3,4,E2,E2W2 T.38N.,R.76W.,SEC 33,NE,N2NW,SENW	Retention	Retention	Disposal	Disposal	Disposal
CO0394	T.37N.,R.76W.,SEC 9,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0395	T.37N.,R.76W.,SEC 9,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0396	T.37N.,R.76W.,SEC 9,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0397	T.37N.,R.76W.,SEC 10,S2NE,NWSE T.37N.,R.76W.,SEC 11,W2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0398	T.37N.,R.76W.,SEC 10,NENW	Retention	Disposal	Disposal	Disposal	Disposal
CO0399	T.37N.,R.76W.,SEC 26,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.37N.,R.76W.,SEC 27,E2SE					
CO0400	T.38N.,R.76W.,SEC 4,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0401	T.38N.,R.76W.,SEC 5,S2N2,N2S2,S2SE T.38N.,R.76W.,SEC 6,LOT 5,S2NE,SENW,NSE	Retention	Retention	Disposal	Disposal	Disposal
CO0402	T.38N.,R.76W.,SEC 8,SWSW,SWSE T.38N.,R.76W.,SEC 17,NWNE,N2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0403	T.38N.,R.76W.,SEC 9,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0404	T.38N.,R.76W.,SEC 9,SESE	Retention	Retention	Disposal	Disposal	Disposal
CO0405	T.38N.,R.76W.,SEC 10,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0406	T.38N.,R.76W.,SEC 11,NESE	Retention	Retention	Disposal	Disposal	Disposal
CO0407	T.38N.,R.76W.,SEC 12,S2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0408	T.38N.,R.76W.,SEC 14,SWSW T.38N.,R.76W.,SEC 23,NW	Retention	Retention	Disposal	Disposal	Disposal
CO0409	T.38N.,R.76W.,SEC 14,SESE	Retention	Retention	Disposal	Disposal	Disposal
CO0410	T.38N.,R.76W.,SEC 15,NESW,N2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0411	T.38N.,R.76W.,SEC 24,NE	Retention	Retention	Disposal	Disposal	Disposal
CO0412	T.39N.,R.76W.,SEC 1,SWSW T.39N.,R.76W.,SEC 12,NWNE,N2NW,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0413	T.39N.,R.76W.,SEC 2,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0414	T.39N.,R.76W.,SEC 2,S2NW,SW T.39N.,R.76W.,SEC 3,E2SW,SWSW,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0415	T.39N.,R.76W.,SEC 6,LOTS 6,7	Retention	Retention	Disposal	Disposal	Disposal
CO0416	T.39N.,R.76W.,SEC 7,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0417	T.39N.,R.76W.,SEC 12,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0418	T.39N.,R.76W.,SEC 13,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0419	T.39N.,R.76W.,SEC 13,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0420	T.39N.,R.76W.,SEC 13,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0421	T.39N.,R.76W.,SEC 14,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0422	T.39N.,R.76W.,SEC 18,LOTS 1,2,NE,E2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0422	T.39N.,R.77W.,SEC 13,SENE	Retention	Retention	Disposal	Disposal	Disposal
CO0423	T.39N.,R.76W.,SEC 19,W2E2,SENW,E2SW	Retention	Retention	Disposal	Disposal	Disposal
CO0424	T.39N.,R.76W.,SEC 25,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0425	T.39N.,R.76W.,SEC 25,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0426	T.39N.,R.76W.,SEC 26,SWNE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0427	T.39N.,R.76W.,SEC 31,W2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0428	T.39N.,R.76W.,SEC 32,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0429	T.39N.,R.76W.,SEC 33,W2NE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0430	T.39N.,R.76W.,SEC 34,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0431	T.39N.,R.76W.,SEC 35,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0432	T.40N.,R.76W.,SEC 1,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
CO0433	T.40N.,R.76W.,SEC 2,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0434	T.40N.,R.76W.,SEC 6,LOTS 5,6,7,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0434	T.40N.,R.77W.,SEC 1,SE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0435	T.40N.,R.76W.,SEC 10,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0436	T.40N.,R.76W.,SEC 14,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0437	T.40N.,R.76W.,SEC 17,S2NE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0438	T.40N.,R.76W.,SEC 18,LOTS 1,2,3,4,W2NE,E2W2,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0439	T.41N.,R.76W.,SEC 29,E2NE,E2SW,SE T.41N.,R.76W.,SEC 32,E2NE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0440	T.29N.,R.77W.,SEC 4,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
CO0441	T.29N.,R.77W.,SEC 10,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0442	T.29N.,R.77W.,SEC 10,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0443	T.29N.,R.77W.,SEC 11,NENE	Retention	Retention	Disposal	Disposal	Disposal
CO0444	T.29N.,R.77W.,SEC 13,S2NW,N2SW T.29N.,R.77W.,SEC 14,S2NE,SENW,NESW,N2SE,SESE T.29N.,R.77W.,SEC 23,NENE	Retention	Retention	Disposal	Disposal	Disposal
CO0445	T.29N.,R.77W.,SEC 35,NESE	Retention	Retention	Disposal	Disposal	Disposal
CO0446	T.31N.,R.77W.,SEC 1,LOT 4 T.31N.,R.77W.,SEC 2,LOTS 1,2,3,4,S2N2,S2 T.31N.,R.77W.,SEC 3,SENE T.31N.,R.77W.,SEC 11,N2,SW,W2SE (LESS PAT MS494)	Retention	Retention	Disposal	Disposal	Disposal
CO0447	T.31N.,R.77W.,SEC 3,LOT 3	Retention	Disposal	Disposal	Disposal	Disposal
CO0448	T.32N.,R.77W.,SEC 10,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
CO0449	T.32N.,R.77W.,SEC 25,LOTS 5,6	Disposal	Disposal	Disposal	Disposal	Disposal
CO0450	T.33N.,R.77W.,SEC 25,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0451	T.32N.,R.77W.,SEC 26,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0452	T.32N.,R.77W.,SEC 26,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
CO0453	T.33N.,R.77W.,SEC 1,SW,W2SE,SESE	Retention	Retention	Disposal	Disposal	Disposal
CO0454	T.33N.,R.77W.,SEC 35,S2	Disposal	Disposal	Disposal	Disposal	Disposal
CO0455	T.34N.,R.77W.,SEC 11,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0456	T.34N.,R.77W.,SEC 15,SWNW,S2 T.34N.,R.77W.,SEC 22,ALL T.34N.,R.77W.,SEC 23,W2SW T.34N.,R.77W.,SEC 26,W2NW T.34N.,R.77W.,SEC 27,NE,E2NW	Retention	Retention	Disposal	Disposal	Disposal
CO0457	T.35N.,R.77W.,SEC 1,LOTS 3,4,S2NW,N2S2 T.35N.,R.77W.,SEC 2,LOT 1,SENE	Retention	Retention	Disposal	Disposal	Disposal
CO0458	T.35N.,R.77W.,SEC 10,ALL T.35N.,R.77W.,SEC 11,NW	Retention	Retention	Disposal	Disposal	Disposal
CO0459	T.35N.,R.77W.,SEC 12,SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0460	T.35N.,R.77W.,SEC 13,E2NE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0461	T.35N.,R.77W.,SEC 14,NW,N2SW	Retention	Retention	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
CO0462	T.35N.,R.77W.,SEC 14,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0463	T.35N.,R.77W.,SEC 35,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0464	T.36N.,R.77W.,SEC 25,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
CO0465	T.36N.,R.77W.,SEC 35,E2SE	Retention	Retention	Disposal	Disposal	Disposal
CO0466	T.38N.,R.77W.,SEC 1,SENW,NESW	Retention	Retention	Disposal	Disposal	Disposal
CO0467	T.39N.,R.77W.,SEC 11,NESE	Retention	Retention	Disposal	Disposal	Disposal
CO0468	T.39N.,R.77W.,SEC 12,NE,NENW	Retention	Retention	Disposal	Disposal	Disposal
CO0469	T.39N.,R.77W.,SEC 13,NW,N2SW T.39N.,R.77W.,SEC 14,NE,N2NW,SENW,E2SE T.39N.,R.77W.,SEC 23,E2NE,NESE T.39N.,R.77W.,SEC 24,W2W2 T.39N.,R.77W.,SEC 25,W2NW,NWSW	Retention	Retention	Disposal	Disposal	Disposal
CO0470	T.39N.,R.77W.,SEC 13,SWSE T.39N.,R.77W.,SEC 24,NE,NESE	Retention	Retention	Disposal	Disposal	Disposal
CO0471	T.39N.,R.77W.,SEC 25,W2NE,NWSE	Retention	Retention	Disposal	Disposal	Disposal
CO0472	T.40N.,R.77W.,SEC 14,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0473	T.28N.,R.71W.,SEC 9,BLOCK 7,LOTS 23 & 24	Disposal	Disposal	Disposal	Disposal	Disposal
CO0474	T.28N.,R.71W.,SEC 9,BLOCK 7,LOT 21	Disposal	Disposal	Disposal	Disposal	Disposal
CO0475	T.31N.,R.71W.,SEC 5,????	Disposal	Disposal	Disposal	Disposal	Disposal
CO0476	T.38N.,R.77W.,SEC 20,S2S2 T.38N.,R.77W.,SEC 21,E2,NENW T.38N.,R.77W.,SEC 22,ALL T.38N.,R.77W.,SEC 23,ALL T.38N.,R.77W.,SEC 24,ALL T.38N.,R.77W.,SEC 29,NWNE,NW,W2SW T.38N.,R.77W.,SEC 30,S2NE,E2SW,SE T.38N.,R.77W.,SEC 31,NE T.38N.,R.77W.,SEC 32,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0476	T.38N.,R.78W.,SEC 25,S2S2 T.38N.,R.78W.,SEC 26,S2SE T.38N.,R.78W.,SEC 35,E2,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
CO0477	T.30N.,R.72W.,SEC 7,LOT 14	Disposal	Disposal	Disposal	Disposal	Disposal
CO0478	T.30N.,R.72W.,SEC 7,LOTS 28,29	Disposal	Disposal	Disposal	Disposal	Disposal
CO0479	T.35N.,R.77W.,SEC 3,LOTS 3,4,S2NW T.35N.,R.77W.,SEC 4,LOTS 1,2,S2NE T.35N.,R.77W.,SEC 5,LOTS 1-4,S2N2,S2 T.35N.,R.77W.,SEC 6,LOTS 1-7,S2NE,SENW,E2SW,SE T.35N.,R.77W.,SEC 7,LOTS 1-4,E2,E2W2 T.35N.,R.77W.,SEC 8,ALL T.35N.,R.77W.,SEC 17,N2 T.35N.,R.77W.,SEC 18,LOTS 1-4,E2,E2W2 T.36N.,R.77W.,SEC 19,LOTS 3,4,E2SW,SE	Retention	Retention	Disposal	Retention	Retention

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.36N.,R.77W.,SEC 20,S2 T.36N.,R.77W.,SEC 21,E2,E2W2,W2SW T.36N.,R.77W.,SEC 22,ALL T.36N.,R.77W.,SEC 23,N2N2,SWNW,W2SW,SESW,E2SE,SWSE T.36N.,R.77W.,SEC 24,NWNW,SW T.36N.,R.77W.,SEC 26,W2W2 T.36N.,R.77W.,SEC 27,ALL T.36N.,R.77W.,SEC 28,ALL T.36N.,R.77W.,SEC 29,ALL T.36N.,R.77W.,SEC 30,LOTS 1-4,E2,E2W2 T.36N.,R.77W.,SEC 31,LOTS 1-4,E2,E2W2 T.36N.,R.77W.,SEC 32,ALL T.36N.,R.77W.,SEC 33,ALL T.36N.,R.77W.,SEC 34,ALL T.36N.,R.77W.,SEC 35,SW T.35N.,R.78W.,SEC 12,E2 T.35N.,R.78W.,SEC 13,E2 T.35N.,R.78W.,SEC 24,N2 T.36N.,R.78W.,SEC 24,SESW,S2SE T.36N.,R.78W.,SEC 25,N2					
CO0480	T.35N.,R.74W.,SEC 23,lot 8 (NESE)	Disposal	Disposal	Disposal	Disposal	Disposal
GO0000	T.26N.,R.64W.,SEC 26,SWSW T.26N.,R.64W.,SEC 27,S2SE T.26N.,R.64W.,SEC 35,LOTS 5,8,N2NWNW,N2S2NWNW,SWSE	Retention	Restricted	Retention	Retention	Retention
GO0001	T.20N.,R.60W.,SEC 5,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0002	T.20N.,R.60W.,SEC 18,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
GO0003	T.22N.,R.60W.,SEC 7,LOT 1	Pending	Pending	Pending	Pending	Pending
GO0004	T.22N.,R.60W.,SEC 7,LOTS 3,4	Pending	Pending	Pending	Pending	Pending
GO0005	T.22N.,R.60W.,SEC 18,LOTS 4,5,E2SW,SE T.22N.,R.60W.,SEC 19,LOTS 1,2,3,NESW	Retention	Retention	Restricted	Restricted	Restricted
GO0005	T.22N.,R.61W.,SEC 23,NENE,E2SENE,E2NESE T.22N.,R.61W.,SEC 24,N2,SW,N2SE,SWSE T.22N.,R.61W.,SEC 25,N2,W2SE	Retention	Restricted	Disposal	Disposal	Disposal
GO0006	T.22N.,R.60W.,SEC 17,SWNW	Retention	Restricted	Disposal	Disposal	Disposal
GO0007	T.22N.,R.60W.,SEC 17,NESW,E2SESW,SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0008	T.22N.,R.60W.,SEC 18,LOT 6	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
GO0009	T.24N.,R.60W.,SEC 4,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0010	T.24N.,R.60W.,SEC 4,SWSWNW T.24N.,R.60W.,SEC 5,LOTS 3,4,6,SWNE,S2N2SENE,S2SENE,S2NW,SW T.24N.,R.60W.,SEC 6,LOTS 1,2,3,4,S2NE,SENW,N2SE,SESE	Restricted	Restricted	Restricted	Restricted	Restricted

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.24N.,R.60W.,SEC 8,W2E2NW,E2SW,SWSE					
GO0010	T.25N.,R.60W.,SEC 31,LOTS 1,2,3,4,S2NE,E2W2,SE T.25N.,R.60W.,SEC 32,S2NW,SW,SWSWSE	Restricted	Restricted	Restricted	Restricted	Restricted
GO0011	T.24N.,R.60W.,SEC 15,LOT 5,S2SWNE	Pending	Pending	Pending	Pending	Pending
GO0012	T.27N.,R.60W.,SEC 6,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0013	T.27N.,R.60W.,SEC 8,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0014	T.27N.,R.60W.,SEC 9,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0015	T.27N.,R.60W.,SEC 10,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0016	T.27N.,R.60W.,SEC 15,LOT 4 T.27N.,R.60W.,SEC 22,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
GO0017	T.27N.,R.60W.,SEC 27,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0018	T.28N.,R.60W.,SEC 31,SWNE,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0019	T.28N.,R.60W.,SEC 32,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0020	T.29N.,R.60W.,SEC 3,LOTS 1,4	Disposal	Disposal	Disposal	Disposal	Disposal
GO0021	T.29N.,R.60W.,SEC 15,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0022	T.30N.,R.60W.,SEC 15,LOTS 1,2,3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0023	T.30N.,R.60W.,SEC 34,LOTS 1,2,3,4	Disposal	Disposal	Disposal	Disposal	Disposal
GO0024	T.20N.,R.61W.,SEC 1,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0025	T.20N.,R.61W.,SEC 10,SWSE	Retention	Restricted	Disposal	Disposal	Disposal
GO0026	T.20N.,R.61W.,SEC 11,SENE,NESE T.20N.,R.61W.,SEC 12 SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0027	T.20N.,R.61W.,SEC 13,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0028	T.20N.,R.61W.,SEC 13,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0029	T.21N.,R.61W.,SEC 1,SENE	Restricted	Restricted	Restricted	Restricted	Restricted
GO0030	T.22N.,R.61W.,SEC 7,SESE	Sold	Sold	Sold	Sold	Sold
GO0031	T.22N.,R.61W.,SEC 14,WITHIN SENW,N2NESW,W2SE	Retention	Retention	Restricted	Restricted	Restricted
GO0032	T.22N.,R.61W.,SEC 15,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0033	T.22N.,R.61W.,SEC 35,SESW	Retention	Retention	Retention BR WDL	Retention BR WDL	Retention BR WDL
GO0034	T.23N.,R.61W.,SEC 10,NWNE	Pending	Pending	Pending	Pending	Pending
GO0035	T.24N.,R.61W.,SEC 1,W2SW,SESW	Restricted	Restricted	Restricted	Disposal	Disposal
GO0036	T.24N.,R.61W.,SEC 31,W2NWNE	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
GO0037	T.25N.,R.61W.,SEC 15,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0038	T.25N.,R.61W.,SEC 28,NWNW	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL
GO0039	T.25N.,R.61W.,SEC 35,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0040	T.26N.,R.61W.,SEC 6,LOT 3,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0041	T.26N.,R.61W.,SEC 7,LOT 4,SESW,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0042	T.26N.,R.61W.,SEC 7,E2NE T.26N.,R.61W.,SEC 8,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
GO0043	T.26N.,R.61W.,SEC 20,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0044	T.26N.,R.61W.,SEC 30,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0045	T.26N.,R.61W.,SEC 33,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0046	T.26N.,R.61W.,SEC 34,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0047	T.27N.,R.61W.,SEC 7,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0048	T.29N.,R.61W.,SEC 6,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
GO0049	T.20N.,R.62W.,SEC 20,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0050	T.20N.,R.62W.,SEC 21,E2NE,SWNE T.20N.,R.62W.,SEC 22,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0051	T.20N.,R.62W.,SEC 22,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0052	T.22N.,R.62W.,SEC 11,SW T.22N.,R.62W.,SEC 14,N2NW	Retention	Retention	Restricted	Restricted	Restricted
GO0053	T.22N.,R.62W.,SEC 12,WITHIN NWNWNW	Retention BR ACQ	Retention BR ACQ	Retention BR ACQ	Retention BR ACQ	Retention BR ACQ
GO0054	T.22N.,R.62W.,SEC 14,SESW	Retention	Retention	Restricted	Restricted	Restricted
GO0055	T.22N.,R.62W.,SEC 23,NWNE	Retention	Retention	Restricted	Restricted	Restricted
GO0056	T.22N.,R.62W.,SEC 21,E2SW,W2SE,SESE T.22N.,R.62W.,SEC 28,N2NW	Retention	Retention	Restricted	Restricted	Restricted
GO0057	T.23N.,R.62W.,SEC 4,LOT 3,SENW,NESW,NWSE	Sold	Sold	Sold	Sold	Sold
GO0058	T.23N.,R.62W.,SEC 25,N2SWSE	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
GO0060	T.25N.,R.62W.,SEC 2,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0061	T.25N.,R.62W.,SEC 2,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0062	T.25N.,R.62W.,SEC 2,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0063	T.25N.,R.62W.,SEC 4,LOT 4 T.25N.,R.62W.,SEC 5,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
GO0064	T.25N.,R.62W.,SEC 5,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0065	T.25N.,R.62W.,SEC 8,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0066	T.25N.,R.62W.,SEC 15,SESE T.25N.,R.62W.,SEC 22,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0067	T.25N.,R.62W.,SEC 30,LOTS 3,4,SESW	Restricted	Retention	Restricted	Restricted	Restricted
GO0067	T.25N.,R.63W.,SEC 25,E2NE	Restricted	Retention	Restricted	Restricted	Restricted
GO0068	T.26N.,R.62W.,SEC 1,LOT 2,SWNE,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0069	T.26N.,R.62W.,SEC 5,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0070	T.26N.,R.62W.,SEC 20,E2SW,SWSE T.26N.,R.62W.,SEC 29,W2NE	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL
GO0071	T.26N.,R.62W.,SEC 21,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0072	T.26N.,R.62W.,SEC 25,NWSW	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL
GO0073	T.26N.,R.62W.,SEC 30,LOT 4 T.26N.,R.62W.,SEC 31,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
GO0074	T.26N.,R.62W.,SEC 30,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0075	T.26N.,R.62W.,SEC 35,SESE	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
GO0076	T.27N.,R.62W.,SEC 7,E2NE T.27N.,R.62W.,SEC 8,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0077	T.27N.,R.63W.,SEC 12,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0077	T.27N.,R.62W.,SEC 7,LOT 3,E2SW,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0078	T.27N.,R.62W.,SEC 9,N2NW,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0079	T.27N.,R.62W.,SEC 14,W2SW T.27N.,R.62W.,SEC 23,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0080	T.27N.,R.62W.,SEC 17,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0081	T.27N.,R.62W.,SEC 18,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0082	T.27N.,R.62W.,SEC 18,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0083	T.27N.,R.62W.,SEC 19,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
GO0084	T.27N.,R.62W.,SEC 30,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
GO0085	T.27N.,R.62W.,SEC 31,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0086	T.28N.,R.62W.,SEC 18,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
GO0087	T.28N.,R.62W.,SEC 21,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0088	T.28N.,R.62W.,SEC 23,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
GO0089	T.28N.,R.62W.,SEC 32,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0090	T.29N.,R.62W.,SEC 4,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0091	T.29N.,R.62W.,SEC 19,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0092	T.29N.,R.62W.,SEC 30,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0093	T.30N.,R.62W.,SEC 13,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0094	T.30N.,R.62W.,SEC 13,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0095	T.19N.,R.63W.,SEC 3,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0096	T.2ON.,R.63W.,SEC 3,LOTS 2,3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0097	T.20N.,R.63W.,SEC 12,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0098	T.20N.,R.63W.,SEC 14,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0099	T.20N.,R.63W.,SEC 15,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0100	T.20N.,R.63W.,SEC 17,E2NE,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0101	T.20N.,R.63W.,SEC 31,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0102	T.21N.,R.63W.,SEC 18,SESW,SWSE T.21N.,R.63W.,SEC 19,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0103	T.21N.,R.63W.,SEC 33,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0104	T.22N.,R.63W.,SEC 7,SESE T.22N.,R.63W.,SEC 18,NENE	Pending	Pending	Pending	Pending	Pending
GO0105	T.23N.,R.63W.,SEC 13,LOTS 1,2	Restricted	Restricted	Restricted	Restricted	Restricted
GO0106	T.24N.,R.63W.,SEC 1,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
GO0107	T.24N.,R.63W.,SEC 31,LOTS 2,3 SENW,NESW,SE	Restricted	Restricted	Restricted	Restricted	Restricted
GO0108	T.24N.,R.63W.,SEC 34,W2NESE	Retention BR	Retention BR	Retention BR	Retention BR	Retention BR

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
		WDL	WDL	WDL	WDL	WDL
GO0109	T.25N.,R.63W.,SEC 2,LOT 4,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0110	T.24N.,R.63W.,SEC 19,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0112	T.25N.,R.63W.,SEC 25,NESW	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
GO0113	T.26N.,R.63W.,SEC 4,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0114	T.23N.,R.63W.,SEC 7,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0115	T.26N.,R.63W.,SEC 8,W2NE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0116	T.26N.,R.63W.,SEC 8,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0117	T.26N.,R.63W.,SEC 14,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0118	T.26N.,R.63W.,SEC 15,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0119	T.26N.,R.63W.,SEC 15,S2SW,SWSE T.26N.,R.63W.,SEC 18,LOTS 1,2,3,4,E2,E2NW,NESW T.26N.,R.63W.,SEC 19,NE,SENW T.26N.,R.63W.,SEC 20,ALL T.26N.,R.63W.,SEC 21,ALL T.26N.,R.63W.,SEC 22,NWNE,N2NW	Retention	Disposal	Disposal	Disposal	Disposal
GO0119	T.26N.,R.64W.,SEC 13,NESE	Retention	Retention	Disposal	Disposal	Disposal
GO0120	T.26N.,R.63W.,SEC 23,W2NE,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0121	T.26N.,R.63W.,SEC 23,E2SE T.26N.,R.63W.,SEC 24,S2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0122	T.26N.,R.63W.,SEC 22,NWNE,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0123	T.26N.,R.63W.,SEC 30,SWNE,E2NW,NESW,N2SE	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL	Disposal PT BR WDL
GO0124	T.27N.,R.63W.,SEC 12,LOT 1,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0125	T.27N.,R.63W.,SEC 23,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0126	T.27N.,R.63W.,SEC 24,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0127	T.27N.,R.63W.,SEC 26,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0128	T.27N.,R.63W.,SEC 28,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0129	T.27N.,R.63W.,SEC 31,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
GO0130	T.27N.,R.63W.,SEC 34,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0131	T.28N.,R.63W.,SEC 17,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0132	T.29N.,R.63W.,SEC 7,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
GO0133	T.29N.,R.63W.,SEC 11,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0134	T.29N.,R.63W.,SEC 12,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0135	T.29N.,R.63W.,SEC 14,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0136	T.29N.,R.63W.,SEC 20,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0137	T.30N.,R.63W.,SEC 33,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0138	T.30N.,R.63W.,SEC 35,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0139	T.19N.,R.64W.,SEC 1,LOT 2,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0140	T.19W.,R.64W.,SEC 7,LOT 3,W2NE,SENE,NESW,N2SE,SESE	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
GO0141	T.19N.,R 64W.,SEC 8,NWNE,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0142	T.19N.,R.64W.,SEC 9,NE,S2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0143	T.19N.,R.64W.,SEC 17,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0144	T.19N.,R.64W.,SEC 30,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
GO0145	T.20N.,R.64W.,SEC 1,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0146	T.20N.,R.64W.,SEC 2,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0147	T.20N.,R.64W.,SEC 2,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0148	T.20N.,R.64W.,SEC 5,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0149	T.20N.,R.64W.,SEC 5,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0150	T.20N.,R.64W.,SEC 8,SWNE,N2SE,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0151	T.20N.,R.64W.,SEC 8,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0152	T.20N.,R.64W.,SEC 9,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0153	T.20N.,R.64W.,SEC 23,SENW,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0154	T.22N.,R.64W.,SEC 5,LOTS 3,4	Disposal	Disposal	Disposal	Disposal	Disposal
GO0155	T.22N.,R.64W.,SEC 10,N2NE	Pending	Pending	Pending	Pending	Pending
GO0156	T.22N.,R.64W.,SEC 18,LOTS 2,3	Pending	Pending	Pending	Pending	Pending
GO0156	T.22N.,R.65W.,SEC 13,S2NE,SENW,E2SE,SWSE	Pending	Pending	Pending	Pending	Pending
GO0157	T.23N.,R.64W.,SEC 1,LOTS 1,2	Pending	Pending	Pending	Pending	Pending
GO0158	T.23N.,R.64W.,SEC 28,SESE	Pending	Pending	Pending	Pending	Pending
GO0159	T.23N.,R.64W.,SEC 29,SWNW	Sold	Sold	Sold	Sold	Sold
GO0160	T.23N.,R.64W.,SEC 30,LOT 2	Sold	Sold	Sold	Sold	Sold
GO0161	T.23N.,R.64W.,SEC 32,NENW	Restricted	Restricted	Restricted	Restricted	Restricted
GO0162	T.24N.,R.64W.,SEC 6,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0163	T.24N.,R.64W.,SEC 27,SENW	Pending	Pending	Pending	Pending	Pending
GO0164	T.24N.,R.64W.,SEC 35,S2SE	Pending	Pending	Pending	Pending	Pending
GO0165	T.25N.,R.64W.,SEC 11,LOTS 3,4	Disposal	Disposal	Disposal	Disposal	Disposal
GO0166	T.26N.,R.64W.,SEC 7,LOT 5	Restricted	Restricted	Restricted	Disposal	Disposal
GO0167	T.26N.,R.64W.,SEC 8,LOT 5	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
GO0168	T.26N.,R.64W.,SEC 17,SWSW	Restricted	Restricted	Restricted	Restricted	Restricted
GO0169	T.26N.,R.64W.,SEC 18,LOT 8,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0169	T.26N.,R.65W.,SEC 13,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0170	T.26N.,R.64W.,SEC 20,SWNE,E2NW	Restricted	Restricted	Restricted	Restricted	Restricted
GO0171	T.26N.,R.64W.,SEC 24,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0172	T.26N.,R.64W.,SEC 26,SWSW T.26N.,R.64W.,SEC 27,N2SWSE,SESWSE,SESE T.26N.,R.64W.,SEC 35,LOTS 5,8,N2NWNW,N2S2NWNW,SWSE	Restricted	Retention	Retention	Restricted	Restricted
GO0173	T.26N.,R.64W.,SEC 28,E2SW,W2SE	Restricted	Restricted	Restricted	Restricted	Restricted
GO0174	T.26N.,R.64W.,SEC 29,SWSW T.26N.,R.64W.,SEC 30,S2SE	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
GO0175	T.28N.,R.64W.,SEC 8,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0176	T.28N.,R.64W.,SEC 17,NE,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0177	T.28N.,R.64W.,SEC 20,S2NE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0178	T.29N.,R.64W.,SEC 4,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0179	T.29N.,R.64W.,SEC 9,SE2NE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0180	T.29N.,R.64W.,SEC 17,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0181	T.30N.,R.64W.,SEC 5,LOT 4,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0182	T.30N.,R.64W.,SEC 6,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0183	T.30N.,R.64W.,SEC 6,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0184	T.30N.,R.64W.,SEC 8,LOTS 1,3	Disposal	Disposal	Disposal	Disposal	Disposal
GO0185	T.30N.,R.64W.,SEC 8,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0186	T.30N.,R.64W.,SEC 9,S2NE,SENW,NESW,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0187	T.30N.,R.64W.,SEC 11,SENE	Retention	Disposal	Disposal	Disposal	Disposal
GO0188	T.30N.,R.64W.,SEC 12,E2,E2W2	Retention	Disposal	Disposal	Disposal	Disposal
GO0189	T.30N.,R.64W.,SEC 13,W2NW T.30N.,R.64W.,SEC 14,E2NE	Retention	Disposal	Disposal	Disposal	Disposal
GO0190	T.30N.,R.64W.,SEC 15,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0191	T.30N.,R.64W.,SEC 15,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0192	T.30N.,R.64W.,SEC 15,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0193	T.30N.,R.64W.,SEC 18,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0194	T.30N.,R.64W.,SEC 22,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0195	T.30N.,R.64W.,SEC 26,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0196	T.30N.,R.64W.,SEC 29,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0197	T.30N.,R.64W.,SEC 29,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0198	T.30N.,R.64W.,SEC 35,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0199	T.30N.,R.64W.,SEC 35,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0200	T.30N.,R.64W.,SEC 35,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0201	T.19N.,R.65W.,SEC 10,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0202	T.19N.,R.65W.,SEC 12,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0203	T.19N.,R.65W.,SEC 24,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0204	T.22N.,R.65W.,SEC 13,NWNW	Restricted	Restricted	Restricted	Restricted	Restricted
GO0205	T.22N.,R.65W.,SEC 24,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0206	T.22N.,R.65W.,SEC 25,E2NE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0207	T.22N.,R.65W.,SEC 26,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0208	T.22N.,R.65W.,SEC 27,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0209	T.23N.,R.65W.,SEC 27,NESE	Sold	Sold	Sold	Sold	Sold
GO0210	T.24N.,R.65W.,SEC 25,SWNW T.24N.,R.65W.,SEC 26,SENE	Restricted	Restricted	Restricted	Restricted	Restricted
GO0211	T.24N.,R.65W.,SEC 27,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0212	T.24N.,R.65W.,SEC 27,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
GO0213	T.25N.,R.65W.,SEC 1,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0214	T.25N.,R.65W.,SEC 2,LOTS 10,11 T.25N.,R.65W.,SEC 11,LOTS 5,6,7,8 T.25N.,R.65W.,SEC 12,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0215	T.25N.,R.65W.,SEC 22,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0216	T.26N.,R.65W.,SEC 2,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0217	T.26N.,R.65N.,SEC 11,LOTS 1,2,3	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
GO0218	T.26N.,R.65W.,SEC 12,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0219	T.26N.,R.65W.,SEC 11,LOT 10	Restricted	Restricted	Disposal	Disposal	Disposal
GO0220	T.26N.,R.65W.,SEC 13,NWSW T.26N.,R.65W.,SEC 14,LOTS 4,7,8,9,NWSE T.26N.,R.65W.,SEC 23,LOTS 5,6,7	Disposal	Disposal	Disposal	Restricted	Restricted
GO0221	T.23N.,R.62W.,SEC 29,W2SW T.23N.,R.62W.,SEC 32,NW	Sold	Sold	Sold	Sold	Sold
GO0222	T.26N.,R.65W.,SEC 36,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0223	T.27N.,R.65W.,SEC 1,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0224	T.27N.,R.65W.,SEC 2,LOT 4 T.27N.,R.65W.,SEC 3,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
GO0224	T.28N.,R.65W.,SEC 35,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0225	T.27N.,R.65W.,SEC 2,W2SW T.27N.,R.65W.,SEC 3,SESW,S2SE T.27N.,R.65W.,SEC 10,N2N2,SWNE,SENW T.27N.,R.65W.,SEC 11,NE,N2NW,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0226	T.27N.,R.65W.,SEC 15,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0227	T.27N.,R.65W.,SEC 15,SWSW T.27N.,R.65W.,SEC 21,N2NE,SWNE T.27N.,R.65W.,SEC 22,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0228	T.27N.,R.65W.,SEC 22,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0229	T.28N.,R.65W.,SEC 2,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0230	T.28N.,R.65W.,SEC 3,SWNW T.28N.,R.65W.,SEC 4,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0231	T.28N.,R.65W.,SEC 10,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0232	T.28N.,R.65W.,SEC 11,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0233	T.28N.,R.65W.,SEC 25,NWSW	Restricted	Restricted	Restricted	Restricted	Restricted
GO0234	T.28N.,R.65W.,SEC 26,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0235	T.28N.,R.65W.,SEC 26,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0236	T.28N.,R.65W.,SEC 27,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0237	T.28N.,R.65W.,SEC 27,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0238	T.28N.,R.65W.,SEC 34,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0239	T.29N.,R.65W.,SEC 1,S2NW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
GO0240	T.29N.,R.65W.,SEC 10,S2NE T.29N.,R.65W.,SEC 11,E2,S2NW T.29N.,R.65W.,SEC 12,SW T.29N.,R.65W.,SEC 13,SWNW,NWSW T.29N.,R.65W.,SEC 14,N2NE,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0241	T.29N.,R.65W.,SEC 23,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0242	T.29N.,R.65W.,SEC 34,W2NE,S2NW,N2S2	Disposal	Disposal	Disposal	Disposal	Disposal
GO0243	T.29N.,R.65W.,SEC 35,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0244	T.29N.,R.65W.,SEC 35,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0245	T.30N.,R.65W.,SEC 1,E2SW,SWSW,SE T.30N.,R.65W.,SEC 2,SESE T.30N.,R.65W.,SEC 11,NENE T.30N.,R.65W.,SEC 12,NE,N2NW,SENW,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0246	T.30N.,R.65W.,SEC 3,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0247	T.30N.,R.65W.,SEC 10,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0248	T.30N.,R.65W.,SEC 14,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0249	T.30N.,R.65W.,SEC 14,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0250	T.30N.,R.65W.,SEC 24,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0251	T.30N.,R.65W.,SEC 25,W2SW T.30N.,R.65W.,SEC 26,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0252	T.30N.,R.65W.,SEC 26,S2SW T.30N.,R.65W.,SEC 27,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0253	T.23N.,R.65W.,SEC 8,NENE	Sold	Sold	Sold	Sold	Sold
GO0254	T.28N.,R.63W.,SEC 19,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
GO0255	T.29N.,R.64W.,SEC 15,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
GO0256	T.29N.,R.63W.,SEC 11,NENE T.29N.,R.63W.,SEC 12,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
GO0257	T.23N.,R.63W.,SEC 7,SESW,S2N2SE,S2SE	Sold	Sold	Sold	Sold	Sold
GO0258	T.21N.,R.61W.,SEC 1,LOT 2	Sold	Sold	Sold	Sold	Sold
GO0259	T.24N.,R.65W.,SEC 26,SENW	Sold	Sold	Sold	Sold	Sold
GO0260	T.24N.,R.65W.,SEC 24,N2SW	Sold	Sold	Sold	Sold	Sold
GO0261	T.23N.,R.64W.,SEC 31,SESE	Sold	Sold	Sold	Sold	Sold
GO0262	T.22N.,R.63W.,SEC 29,SESE	Sold	Sold	Sold	Sold	Sold
GO0263	T.22N.,R.60W.,SEC 10,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
GO0264	T.26N.,R.65W.,SEC 35,lots 6-8	Disposal	Disposal	Disposal	Disposal	Disposal
NA0001	T.34N.,R.83W.,SEC 4,W2SW T.34N.,R.83W.,SEC 7,LOT 4,SESW T.34N.,R.83W.,SEC 8,SE T.34N.,R.83W.,SEC 9,W2W2,NESE T.34N.,R.83W.,SEC 10,W2E2,N2NW,SESW T.34N.,R.83W.,SEC 15,W2NE,NW,N2SW,NWSE	Retention	Retention	Retention	Retention	Retention

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.34N.,R.83W.,SEC 17,E2,E2W2 T.34N.,R.83W.,SEC 20,E2,E2W2,W2SW T.34N.,R.83W.,SEC 21,N2N2,SWNW,S2 T.34N.,R.83W.,SEC 22,SENW,W2SW,SESW T.34N.,R.83W.,SEC 27,NW T.34N.,R.83W.,SEC 28,N2 T.34N.,R.83W.,SEC 29,NE,N2NW,SENW					
NA0002	T.35N.,R.83W.,SEC 26,SENE,ESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0003	T.30N.,R 77W.,SEC 6,LOTS 5,6	Disposal	Disposal	Disposal	Disposal	Disposal
NA0004	T.31N.,R.77W.,SEC 5,S2SE T.31N.,R.77W.,SEC 8,W2NE,NESW,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0005	T.32N.,R.77W.,SEC 28,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0006	T.32N.,R.77W.,SEC 29,LOTS 4,5	Disposal	Disposal	Disposal	Disposal	Disposal
NA0007	T.34N.,R.77W.,SEC 10,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0008	T.34N.,R.77W.,SEC 21,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0009	T.35N.,R.77W.,SEC 30,LOTS 3,4,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0010	T.35N.,R.77W.,SEC 33,S2SW,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0011	T.36N.,R.77W.,SEC 6,LOT 6	Disposal	Disposal	Disposal	Disposal	Disposal
NA0012	T.30N.,R.78W.,SEC 27,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0013	T.30N.,R.78W.,SEC 19,LOT 4,SESW T.30N.,R.78W.,SEC 30,LOTS 1,2,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0014	T.32N.,R.78W.,SEC 28,SWNE,W2NW,SENW T.32N.,R.78W.,SEC 29,NE,E2NW	Restricted	Restricted	Restricted	Restricted	Restricted
NA0015	T.34N.,R.78W.,SEC 2,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
NA0016	T.34N.,R.78W.,SEC 5,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0017	T.34N.,R.78W.,SEC 13,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0018	T.34N.,R.78W.,SEC 20,S2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0019	T.34N.,R.78W.,SEC 26,SESW	Restricted	Restricted	Disposal	Disposal	Disposal
NA0020	T.29N.,R.79W.,SEC 4,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0021	T.30N.,R.79W.,SEC 11,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0022	T.30N.,R.79W.,SEC 11,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0023	T.30N.,R.79W.,SEC 28,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0024	T.31N.,R.79W.,SEC 31,LOTS 5,6 T.31N.,R.79W.,SEC 32,NWNE,NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0025	T.32N.,R.79W.,SEC 7,LOTS 13-26	Restricted	Restricted	Restricted	Restricted	Restricted
NA0026	T.32N.,R.79W.,SEC 19,LOT 5 T.32N.,R.79W.,SEC 20,LOT 5	Restricted	Restricted	Restricted	Restricted	Restricted
NA0027	T.32N.,R.79W.,SEC 20,LOT 13	Restricted	Restricted	Restricted	Restricted	Restricted
NA0028	T.32N.,R.79W.,SEC 27,E2NWNENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0029	T.32N.,R.79W.,SEC 27,NENENWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0030	T.35N.,R.79W.,SEC 33,SESE	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
NA0031	T.36N.,R.79W.,SEC 19,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0032	T.38N.,R.79W.,SEC 18,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0033	T.31N.,R.80W.,SEC 6,LOTS 15,18	Disposal	Disposal	Disposal	Disposal	Disposal
NA0034	T.31N.,R.80W.,SEC 6,LOTS 16,17	Disposal	Disposal	Disposal	Disposal	Disposal
NA0035	T.31N.,R.80W.,SEC 7,LOTS 13,14	Disposal	Disposal	Disposal	Disposal	Disposal
NA0036	T.31N.,R.80W.,SEC 9,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0037	T.32N.,R.80W.,SEC 6,LOTS 15,16	Restricted	Restricted	Restricted	Disposal	Disposal
NA0038	T.33N.,R.80W.,SEC 15,SWNW	Restricted	Restricted	Restricted	Restricted	Restricted
NA0039	T.33N.,R.80W.,SEC 15,SENW	Restricted	Restricted	Restricted	Restricted	Restricted
NA0040	T.33N.,R.80W.,SEC 15,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0041	T.33N.,R.80W.,SEC 18,NWSE	Disposal	Disposal	Restricted	Restricted	Restricted
NA0042	T.33N.,R.80W.,SEC 18,SESE	Disposal	Disposal	Restricted	Restricted	Restricted
NA0043	T.34N.,R.80W.,SEC 2,LOT 1,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0044	T.35N.,R.80W.,SEC 3,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0045	T.36N.,R.80W.,SEC 4,S2 T.36N.,R.80W.,SEC 9,ALL	Retention	Retention	Retention	Retention	Retention
NA0046	T.36N.,R.80W.,SEC 29,ALL	Disposal	Disposal	Disposal	Disposal	Disposal
NA0047	T.38N.,R.80W.,SEC 31,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0049	T.29N.,R.81W.,SEC 10,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0050	T.29N.,R.81W.,SEC 28,SENE,SESW,E2SE,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0051	T.29N.,R.81W.,SEC 34,E2E2	Retention	Retention	Retention	Retention	Retention
NA0052	T.30N.,R.81W.,SEC 9,SWNE,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0053	T.31N.,R.81W.,SEC 15,S2NW,SESE	Sold	Sold	Sold	Sold	Sold
NA0054	T.31N.,R.81W.,SEC 31,SWNE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0055	T.32N.,R.81W.,SEC 19,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
NA0056	T.32N.,R.81W.,SEC 25,SWSW T.32N.,R.81W.,SEC 26,SESW,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0057	T.33N.,R.81W.,SEC 5,LOTS 2,3,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0058	T.34N.,R.81W.,SEC 27,W2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0059	T.34N.,R.81W.,SEC 33,N2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0060	T.35N.,R.81W.,SEC 5,LOTS 1,2,3,4,S2N2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0061	T.35N.,R.81W.,SEC 35,SESE	Restricted	Restricted	Restricted	Restricted	Restricted
NA0062	T.38N.,R.81W.,SEC 23,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0063	T.38N.,R.81W.,SEC 26,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0064	T.38N.,R.81W.,SEC 34,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0065	T.38N.,R.81W.,SEC 34,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0066	T.40N.,R.81W.,SEC 20,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0067	T.29N.,R.82W.,SEC 3,W2SE,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0068	T.29N.,R.82W.,SEC 10,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0069	T.30N.,R.82W.,SEC 20,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
NA0070	T.31N.,R.82W.,SEC 21,SENE T.31N.,R.82W.,SEC 22,NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0071	T.32N.,R.82W.,SEC 5,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0072	T.32N.,R.82W.,SEC 6,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0073	T.32N.,R.82W.,SEC 8,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0074	T.33N.,R.82W.,SEC 24,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0075	T.33N.,R.82W.,SEC 27,SESE T.33N.,R.82W.,SEC 34,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0076	T.33N.,R.82W.,SEC 32,SWNE,SENW,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0077	T.33N.,R.82W.,SEC 33,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0078	T.33N.,R.82W.,SEC 35,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0079	T.34N.,R.82W.,SEC 32,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0080	T.35N.,R.82W.,SEC 26,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0081	T.35N.,R.82W.,SEC 29,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0082	T.35N.,R.82W.,SEC 33,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0083	T.40N.,R.82W.,SEC 2,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0084	T.40N.,R.82W.,SEC 9,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0085	T.41N.,R.82W.,SEC 34,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0086	T.29N.,R.83W.,SEC 23,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0087	T.29N.,R.83W.,SEC 24,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0088	T.32N.,R.83W.,SEC 1,SESW,E2SE,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0089	T.33N.,R.83W.,SEC 9,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0090	T.33N.,R.83W.,SEC 20,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0091	T.33N.,R.83W.,SEC 34,NENE T.33N.,R.83W.,SEC 35,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0092	T.35N.,R.83W.,SEC 29,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0093	T.35N.,R.83W.,SEC 29,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0094	T.35N.,R.83W.,SEC 34,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0095	T.35N.,R.83W.,SEC 35,N2SW,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0096	T.36N.,R.83W.,SEC 34,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0097	T.36N.,R.83W.,SEC 35,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0098	T.37N.,R.83W.,SEC 18,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0099	T.29N.,R.84W.,SEC 2,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0100	T.30N.,R.84W.,SEC 19,LOT 4 T.30N.,R.84W.,SEC 30,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0101	T.32N.,R.84W.,SEC 9,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0102	T.32N.,R.84W.,SEC 19,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0103	T.32N.,R.84W.,SEC 23,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0104	T.33N.,R.84W.,SEC 28,SWNW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0105	T.33N.,R.84W.,SEC 33,SENE	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
NA0106	T.34N.,R.84W.,SEC 6,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0107	T.34N.,R.84W.,SEC 18,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0108	T.34N.,R.84W.,SEC 33,N2NE,SWNE,E2NW T.34N.,R.84W.,SEC 34,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0109	T.35N.,R.84W.,SEC 17,N2NW,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0110	T.36N.,R.84W.,SEC 7,E2SE T.36N.,R.84W.,SEC 8,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0111	T.36N.,R.84W.,SEC 19,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0112	T.36N.,R.84W.,SEC 29,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0113	T.37N.,R.84W.,SEC 12,W2SW,SESW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0114	T.37N.,R.84W.,SEC 14,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0115	T.37N.,R.84W.,SEC 32,NENE T.37N.,R.84W.,SEC 33,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0116	T.29N.,R.85W.,SEC 20,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0117	T.30N.,R.85W.,SEC 23,S2SE T.30N.,R.85W.,SEC 24,S2SW,SWSE T.30N.,R.85W.,SEC 25,NWNE,N2NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0118	T.35N.,R.85W.,SEC 8,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0119	T.36N.,R.85W.,SEC 3,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
NA0120	T.36N.,R.85W.,SEC 11,W2NE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0121	T.36N.,R.85W.,SEC 11,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0122	T.36N.,R.85W.,SEC 13,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0123	T.36N.,R.85W.,SEC 23,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0124	T.36N.,R.85W.,SEC 26,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0125	T.37N.,R.85W.,SEC 2,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
NA0126	T.37N.,R.85W.,SEC 32,S2NE,N2SE,SWSE T.37N.,R.85W.,SEC 33,SWNE,S2NW,N2S2,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0127	T.33N.,R.86W.,SEC 4,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0128	T.33N.,R.86W.,SEC 6,SWNW,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0129	T.33N.,R.86W.,SEC 7,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0130	T.33N.,R.86W.,SEC 24,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0131	T.34N.,R.86W.,SEC 5,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0132	T.34N.,R.86W.,SEC 12,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0133	T.35N.,R.86W.,SEC 27,SESE T.35N.,R.86W.,SEC 34,E2,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0134	T.36N.,R.86W.,SEC 1,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
NA0135	T.40N.,R.86W.,SEC 4,SESE T.40N.,R.86W.,SEC 9,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0136	T.41N.,R.86W.,SEC 30,LOT 9	Disposal	Disposal	Disposal	Disposal	Disposal
NA0137	T.41N.,R.86W.,SEC 30,TR 89B	Disposal	Disposal	Disposal	Disposal	Disposal
NA0138	T.33N.,R.87W.,SEC 20,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
NA0139	T.33N.,R.87W.,SEC 24,S2SW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0140	T.33N.,R.87W.,SEC 27,SWNE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0141	T.33N.,R.87W.,SEC 30,SWNE,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0142	T.33N.,R.87W.,SEC 30,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0143	T.34N.,R.87W.,SEC 2,SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0144	T.34N.,R.87W.,SEC 11,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0145	T.34N.,R.87W.,SEC 19,LOT 4 T.34N.,R.88W.,SEC 24,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0146	T.34N.,R.87W.,SEC 21,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0147	T.35N.,R.87W.,SEC 20,SWNE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0148	T.36N.,R.87W.,SEC 10,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0149	T.36N.,R.87W.,SEC 14,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0150	T.36N.,R.87W.,SEC 26,SWNE,SENW,NESW,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0151	T.37N.,R.87W.,SEC 15,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0152	T.39N.,R.87W.,SEC 3,NE,S2NW,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0153	T.41N.,R.87W.,SEC 29,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0154	T.33N.,R.88W.,SEC 33,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0155	T.34N.,R.88W.,SEC 1,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0156	T.34N.,R.88W.,SEC 6,LOTS 11,12 T.34N.,R.88W.,SEC 7,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
NA0156	T.34N.,R.89W.,SEC 1,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0157	T.34N.,R.88W.,SEC 7,SESE T.34N.,R.88W.,SEC 18,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0158	T.34N.,R.88W.,SEC 11,SESE T.34N.,R.88W.,SEC 14,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0159	T.34N.,R.88W.,SEC 17,SWNE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0160	T.34N.,R.88W.,SEC 18,LOTS 3,4,SESW T.34N.,R.88W.,SEC 19,LOTS 1,2,3,SENW T.34N.,R.89W.,SEC 13,E2SW,SWSW,SE T.34N.,R.89W.,SEC 24,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0161	T.34N.,R.88W.,SEC 21,SWNE,S2NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0162	T.34N.,R.88W.,SEC 23,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0163	T.34N.,R.88W.,SEC 23,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0164	T.34N.,R.88W.,SEC 25,SWNW T.34N.,R.88W.,SEC 26,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0165	T.35N.,R.88W.,SEC 5,LOTS 5,6,7,8,9,10,11,12	Disposal	Disposal	Disposal	Disposal	Disposal
NA0166	T.35N.,R.88W.,SEC 23,NW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0167	T.35N.,R.88W.,SEC 27,W2SE,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0168	T.35N.,R.88W.,SEC 28,E2W2,SWNW,W2SW T.35N.,R.88W.,SEC 29,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0169	T.35N.,R.88W.,SEC 30,NENE	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
NA0170	T.36N.,R.88W.,SEC 1,LOTS 5,6,7	Disposal	Disposal	Disposal	Disposal	Disposal
NA0171	T.36N.,R.88W.,SEC 3,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0172	T.36N.,R.88W.,SEC 3,NWSW T.36N.,R.88W.,SEC 4,N2S2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0173	T.36N.,R.88W.,SEC 7,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
NA0174	T.36N.,R.88W.,SEC 30,LOTS 5,6,7,8,NENE,W2E2,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0175	T.36N.,R.88W.,SEC 32,N2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0176	T.36N.,R.88W.,SEC 34,S2	Disposal	Disposal	Disposal	Disposal	Disposal
NA0177	T.39N.,R.88W.,SEC 27,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0178	T.39N.,R.88W.,SEC 33,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0179	T.40N.,R.88W.,SEC 3,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
NA0180	T.40N.,R.88W.,SEC 22,SWSW T.40N.,R.88W.,SEC 27,NWNW T.40N.,R.88W.,SEC 28,E2NE,SWNE,NESW,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0181	T.40N.,R.88W.,SEC 29,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0182	T.40N.,R.88W.,SEC 30,S2NE,E2SE	Retention PWR 107	Retention PWR 107	Retention PWR 107	Retention PWR 107	Retention PWR 107
NA0183	T.41N.,R.88W.,SEC 25,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
NA0184	T.41N.,R.88W.,SEC 28,SESW,SE T.41N.,R.88W.,SEC 33,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
NA0185	T.40N.,R.78W.,SEC 7,LOTS 1,2	Sold	Sold	Sold	Sold	Sold
NA0186	T.32N.,R.79W.,SEC 7,LOT 11	Restricted	Restricted	Restricted	Restricted	Restricted
NA0187	T.36N.,R.78W.,SEC 34,NENE,S2NE,SE T.36N.,R.78W.,SEC 35,W2	Retention	Retention	Retention	Retention	Retention
NA0188	T.37N.,R.77W.,SEC 4,S2S2	Retention	Retention	Retention	Retention	Retention
NA0189	T.36N.,R.77W.,SEC 5,SENW,E2SW T.36N.,R.77W.,SEC 7,SESW,SE T.36N.,R.77W.,SEC 8,N2NE,SWNE,E2NW,SW,NWSE T.36N.,R.77W.,SEC 9,W2NW,NWSW T.36N.,R.77W.,SEC 9,W2NW,NWSW T.36N.,R.77W.,SEC 18,LOT 1,2,3,N2NE,NENW	Retention	Retention	Retention	Retention	Retention
NA0190	T.29N.,R.77W.,SEC 19,LOTS 5-7 T.29N.,R.77W.,SEC 21,SE T.29N.,R.77W.,SEC 26,SW,N2SE,SWSE T.29N.,R.77W.,SEC 27,SWNE,W2,SE T.29N.,R.77W.,SEC 28,S2NW T.29N.,R.77W.,SEC 29,W2NW T.29N.,R.77W.,SEC 30,LOTS 5-8,NE T.29N.,R.78W.,SEC 14,W2,N2SE T.29N.,R.78W.,SEC 23,SWNE,S2NW,NWSE T.29N.,R.78W.,SEC 25,N2 T.29N.,R.78W.,SEC 26,NENE	Retention	Retention	Retention	Retention	Retention

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
NA0191	T.28N.,R.77W.,SEC 10,E2SW,SWSE T.28N.,R.77W.,SEC 15,NENW T.29N.,R.77W.,SEC 30,LOTS 9-12,SE T.29N.,R.77W.,SEC 31,LOTS 4-10,E2,SESW T.29N.,R.78W.,SEC 8,W2SE,SESE T.29N.,R.78W.,SEC 9,S2S2 T.29N.,R.78W.,SEC 17,N2NE,SENE T.29N.,R.78W.,SEC 25,S2 T.29N.,R.78W.,SEC 26,S2NE,SE T.29N.,R.78W.,SEC 35,NE,N2SE,SWSE T.28N.,R.79W.,SEC 6,SWNE,SENW T.29N.,R.79W.,SEC 31,LOT 4,SESW T.29N.,R.79W.,SEC 32,SESW,W2SE T.28N.,R.80W.,SEC. 1,LOTS 1,2 T.28N.,R.80W.,SEC 11,NENE T.28N.,R.80W.,SEC 12,N2NW T.28N.,R.80W.,SEC 15,SE T.28N.,R.80W.,SEC 22,E2W2 T.29N.,R.80W.,SEC 35,E2SE	Retention	Retention	Retention	Retention	Retention
NA0192	T.31N.,R.80W.,SEC 5,SE T.31N.,R.80W.,SEC 6,LOTS 15,16 T.31N.,R.81W.,SEC 22,SW T.31N.,R.81W.,SEC 26,S2N2,S2 T.31N.,R.81W.,SEC 27,S2NE,W2,SE T.31N.,R.81W.,SEC 34,NE,E2NW T.31N.,R.81W.,SEC 35,N2,N2SW	Retention	Retention	Retention	Retention	Retention
NA0193	T.30N.,R.79W.,SEC 3,SESE T.30N.,R.79W.,SEC 10,NE,N2SE	Retention	Retention	Retention	Retention	Retention
NA0195	T.30N.,R.78W.,SEC 27,NWNE,NENW T.33N.,R.81W.,SEC 5,LOTS 2,3,SENW T.32N.,R.82W.,SEC 5,LOT 2 T.32N.,R.82W.,SEC 6,SENW T.32N.,R.82W.,SEC 8,SWNE T.33N.,R.82W.,SEC 8,E2NE,NESE T.33N.,R.82W.,SEC 14,S2NW,SW T.33N.,R.82W.,SEC 15,S2N2,S2 T.33N.,R.82W.,SEC 27,SESE T.33N.,R.82W.,SEC 32,SWNE,SENW,E2SW T.33N.,R.82W.,SEC 33,E2NE,SWNE,SENW;SWSE T.33N.,R.82W.,SEC 34,NENE T.33N.,R.82W.,SEC 35,S2SE	Retention	Retention	Retention	Retention	Retention
NA0196	T.38N.,R.79W.,SEC 22,SW T.38N.,R.79W.,SEC 27,NWSE	Retention	Retention	Retention	Retention	Retention

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
NA0197	T.35N.,R.80W.,SEC 33,N2NE,NENW	Restricted	Restricted	Restricted	Restricted	Restricted
NA0198	T.31N.,R.81W.,SEC 6,LOTS 4,5,SWNE,SENW,SE	Retention	Retention	Retention	Retention	Retention
NA0198	T.31N.,R.82W.,SEC 1,LOT 1,SENE	Retention	Retention	Retention	Retention	Retention
NA0199	T.35N.,R.83W.,SEC 19,LOTS 3,4 T.35N.,R.83W.,SEC 30,LOT 1	Retention	Retention	Retention	Retention	Retention
NA0199	T.34N.,R.84W.,SEC 4,LOT 2	Retention	Retention	Retention	Retention	Retention
NA0199	T.35N.,R.84W.,SEC 1,SW,W2SE,SWNE & S2NW SOUTH OF HIGHWAY T.35N.,R.84W.,SEC 2,S2,S2N2 SOUTH OF HIGHWAY T.35N.,R.84W.,SEC 3,SE,S2SW,S2NS & N2SW SOUTH OF HIGHWAY T.35N.,R.84W.,SEC 4,SESE T.35N.,R.84W.,SEC 9,NENE T.35N.,R.84W.,SEC 10,NWNW T.35N.,R.84W.,SEC 13,S2SW T.35N.,R.84W.,SEC 17,N2NW,SWNW T.35N.,R.85W.,SEC 19,SWNE,PORTION OF NWSE & NWNW & SENW,NESE,S2SE T.35N.,R.84W.,SEC 20,NENE T.35N.,R.84W.,SEC 21,NE,NWNW T.35N.,R.84W.,SEC 22,S2 T.35N.,R.84W.,SEC 23,S2NE,N2SW T.35N.,R.84W.,SEC 24,E2,E2W2,W2NW T.35N.,R.84W.,SEC 25,N2NE,E2NW T.35N.,R.84W.,SEC 27,SENE,W2E2,W2,NESE T.35N.,R.84W.,SEC 28,E2E2 T,35N.,R.84W.,SEC 29,SWNE,S2NW,PORTION OF NWSE T.35N.,R.84W.,SEC 30,W2NE,E2NE T.35N.,R.84W.,SEC 33,NENE,S2NE,NESW,SE T.35N.,R.84W.,SEC 34,NWNE,N2NW	Retention	Retention	Retention	Retention	Retention
NA0200	T.33N.,R.81W.,SEC 3,SWNE,SOUTH & EAST OF ROAD	Retention	Retention	Retention	Retention	Retention
NA0201	T.33N.,R.89W.,SEC 15,SW,N2SE,SWSE	Sold	Sold	Sold	Sold	Sold
NA0202	T.40N.,R.87W.,SEC 13,SESESWNE	Sold	Sold	Sold	Sold	Sold
PL0001	T.22N.,R.65W.,SEC 5,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0002	T.22N.,R.65W.,SEC 6,LOTS 1,2,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0003	T.22N.,R.65W.,SEC 8,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0004	T.23N.,R.65W.,SEC 5,LOT 4,SWNW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0005	T.23N.,R.65W.,SEC 7,S2NE,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0006	T.23N.,R.65W.,SEC 8,NENE	Sold	Sold	Sold	Sold	Sold
PL0007	T.24N.,R.65W.,SEC 28,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0008	T.24N.,R.65W.,SEC 31,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0009	T.24N.,R.65W.,SEC 32,NENW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0010	T.24N.,R.65W.,SEC 32,SWNW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0011	T.25N.,R.65W.,SEC 6,SWNE	Disposal	Restricted	Disposal	Disposal	Disposal
PL0012	T.25N.,R.65W.,SEC 6,LOTS 1,2,3	Restricted	Restricted	Restricted	Disposal	Disposal
PL0012	T.26N.,R.65W.,SEC 31,LOTS 3,4,E2SW	Restricted	Restricted	Restricted	Disposal	Disposal
PL0013	T.25N.,R.65W.,SEC 7,SWNE,N2SE,SWSE	Disposal	Restricted	Disposal	Disposal	Disposal
PL0014	T.25N.,R.65W.,SEC 18,NENE	Disposal	Restricted	Disposal	Disposal	Disposal
PL0015	T.25N.,R.65W.,SEC 19,LOTS 3,4,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0016	T.25N.,R.65W.,SEC 20,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0017	T.26N.,R.65W.,SEC 20,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0018	T.26N.,R.65W.,SEC 28,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0019	T.26N.,R.65W.,SEC 29,NW,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0020	T.27N.,R.65W.,SEC 5,LOTS 3,4 EXCEPT MS485,6,8 T.27N.,R.65W.,SEC 6,LOTS 15,16	Disposal	Disposal	Disposal	Disposal	Disposal
PL0021	T.27N.,R.66W.,SEC 5,LOT 4 EXCEPT MS485	Disposal	Disposal	Disposal	Disposal	Disposal
PL0022	T.27N.,R.65W.,SEC 6,LOT 17	Disposal	Disposal	Disposal	Disposal	Disposal
PL0022	T.27N.,R.66W.,SEC 1,LOTS 6,7,8,9,SWNE,SESW T.27N.,R.66W.,SEC 12,LOT 6,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0023	T.27N.,R.65W.,SEC 7,LOT 18	Disposal	Disposal	Disposal	Disposal	Disposal
PL0024	T.27N.,R.65W.,SEC 7,LOTS 2,3 EXCEPT MS266 & MS50A;LOTS4,13,14; AND LOTS 11,12,S2SE LESS PATENTS T.27N.,R.65W.,SEC 8,S2SW LESS PATENTS T.27N.,R.65W.,SEC 18,LOTS 1,6,10	Disposal	Disposal	Disposal	Disposal	Disposal
PL0024	T.27N.,R.66W.,SEC 12,LOTS 3,7,S2SE T.27N.,R.66W.,SEC 13,LOTS 4,9,10	Disposal	Disposal	Disposal	Disposal	Disposal
PL0025	T.27N.,R.65W.,SEC 18,LOTS 2,7,9,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0026	T.27N.,R.65W.,SEC 32,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0027	T.27N.,R.65W.,SEC 33,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0028	T.28N.,R.65W.,SEC 5,LOT 4,S2NW,E2SW,NWSE T.28N.,R.65W.,SEC 6,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0029	T.28N.,R.65W.,SEC 18,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0030	T.28N.,R.65W.,SEC 18,SWSE T.28N.,R.65W.,SEC 19,W2NE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0031	T.28N.,R.65W.,SEC 19,LOTS 3,4	Disposal	Disposal	Disposal	Disposal	Disposal
PL0031	T.28N.,R.66W.,SEC 24,SESE T.28N.,R.66W.,SEC 25,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0032	T.28N.,R.65W.,SEC 20,E2NE,SE T.28N.,R.65W.,SEC 21,W2NE,NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0033	T.28N.,R.65W.,SEC 28,NW,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0034	T.28N.,R.65W.,SEC 28,SESE T.28N.,R.65W.,SEC 33,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0035	T.28N.,R.65W.,SEC 29,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0036	T.28N.,R.65W.,SEC 30,LOTS 2,3	Disposal	Disposal	Disposal	Disposal	Disposal
PL0037	T.28N.,R.65W.,SEC 30,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0038	T.28N.,R.65W.,SEC 30,SWSE T.28N.,R.65W.,SEC 31,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0039	T.28N.,R.65W.,SEC 32,LOT 8	Disposal	Disposal	Disposal	Disposal	Disposal
PL0040	T.28N.,R.65W.,SEC 32,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0041	T.29N.,R.65W.,SEC 8,SENE T.29N.,R.65W.,SEC 9,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0042	T.29N.,R.65W.,SEC 20,SESW,E2SE,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0043	T.29N.,R.65W.,SEC 28,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0044	T.30N.,R.65W.,SEC 8,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0045	T.30N.,R.65W.,SEC 21,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0046	T.30N.,R.65W.,SEC 28,SWSW T.30N.,R.65W.,SEC 33,N2N2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0047	T.30N.,R.65W.,SEC 29,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0048	T.22N.,R.65W.,SEC 29,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0049	T.23N.,R.66W.,SEC 13,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0050	T.24N.,R.66W.,SEC 2,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
PL0050	T.25N.,R.65W.,SEC 35,W2NE,SENE,N2SE,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0051	T.25N.,R.66W.,SEC 4,LOT 1,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0052	T.24N.,R.66W.,SEC 7,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0053	T.24N.,R.66W.,SEC 32,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0054	T.25N.,R.66W.,SEC 3,E2SW,SE T.25N.,R.66W.,SEC 9,W2NE,SENE,SW,N2SE,SWSE T.25N.,R.66W.,SEC 10,E2NW,SWNW,N2SW	Retention	Restricted	Disposal	Disposal	Disposal
PL0055	T.25N.,R.66W.,SEC 4,LOT 3,SENW,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0056	T.25N.,R.66W.,SEC 5,LOTS 3,4,S2NW,SW	Retention	Restricted	Disposal	Disposal	Disposal
PL0056	T.26N.,R.66W.,SEC 32,SWNW,NWSW,S2S2	Retention	Restricted	Disposal	Disposal	Disposal
PL0057	T.25N.,R.66W.,SEC 7,LOTS 1,2,3,4,E2,E2W2 (ALL) T.25N.,R.66W.,SEC 19,LOT 1,NENW	Retention	Restricted	Disposal	Disposal	Disposal
PL0057	T.25N.,R.67W.,SEC 12,S2S2 T.25N.,R.67W.,SEC 13,ALL T.25N.,R.67W.,SEC 14,ALL T.25N.,R.67W.,SEC 15,SENE,SE T.25N.,R.67W.,SEC 21,NENE T.25N.,R.67W.,SEC 22,N2N2 T.25N.,R.67W.,SEC 23,NE,N2NW T.25N.,R.67W.,SEC 24,N2,NWSE	Retention	Restricted	Disposal	Disposal	Disposal
PL0058	T.25N.,R.66W.,SEC 17,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0059	T.25N.,R.66W.,SEC 24,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0060	T.25N.,R.66W.,SEC 25,SWNE,SENW,NESW,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0061	T.25N.,R.66W.,SEC 30,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0062	T.25N.,R.66W.,SEC 31,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
PL0063	T.25N.,R.66W.,SEC 31,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0064	T.25N.,R.66W.,SEC 32,S2SW,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0065	T.26N.,R.66W.,SEC 5,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0066	T.26N.,R.66W.,SEC 7,LOTS 3,4,E2SW,SWSE T.26N.,R.66W.,SEC 17,E2NE,W2NW,SENW,N2SW,SESW,SE T.26N.,R.66W.,SEC 18,NE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0067	T.26N.,R.66W.,SEC 21,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0068	T.26N.,R.66W.,SEC 21,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0069	T.26N.,R.66W.,SEC 32,S2NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0070	T.26N.,R.66W.,SEC 35,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0071	T.27N.,R.66W.,SEC 1,LOT 4,SWNW,NWSW T.27N.,R.66W.,SEC 2,LOT 1,SENE,N2S2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0072	T.27N.,R.66W.,SEC 9,E2NE,SENE T.27N.,R,66W.,SEC 10,W2NE,NW,N2SW,SESW,SE T.27N.,R.66W.,SEC 11,N2SW,SWSW,SE(LESS PAT MS) T.27N.,R.66W.,SEC 14,LOTS 3,5,14,SENW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0073	T.27N.,R.66W.,SEC 13,LOT 12	Disposal	Disposal	Disposal	Disposal	Disposal
PL0074	T.27N.,R.66W.,SEC 13,LOT 13	Disposal	Disposal	Disposal	Disposal	Disposal
PL0075	T.27N.,R.66W.,SEC 14,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0076	T.27N.,R.66W.,SEC 24,SWNE,SENW,NESW,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0077	T.27N.,R.66W.,SEC 25,LOT 10	Disposal	Disposal	Disposal	Disposal	Disposal
PL0078	T.27N.,R.66W.,SEC 36,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
PL0079	T.27N.,R.66W.,SEC 25,LOTS 2,3,4,5,6,7 T.27N.,R.66W.,SEC 26,LOTS 2,3,4,5	Disposal	Disposal	Disposal	Disposal	Disposal
PL0080	T.27N.,R.66W.,SEC 23,SWSW T.27N.,R.66W.,SEC 24,N2NW,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0081	T.28N.,R.66W.,SEC 11,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0082	T.28N.,R.66W.,SEC 14,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0083	T.28N.,R.66W.,SEC 21,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0084	T.28N.,R.66W.,SEC 23,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0085	T.28N.,R.66W.,SEC 25,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0086	T.28N.,R.66W.,SEC 26,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0087	T.28N.,R.66W.,SEC 33,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0088	T.28N.,R.66W.,SEC 35,S2NE,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0089	T.29N.,R.66W.,SEC 5,LOTS 3,4 T.30N.,R.66W.,SEC 32,S2SW	Restricted	Restricted	Restricted	Restricted	Restricted
PL0089	T.30N.,R.66W.,SEC 32,S2SW	Restricted	Restricted	Restricted	Restricted	Restricted
PL0090	T.29N.,R.66W.,SEC 14,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0091	T.29N.,R.66W.,SEC 31,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0092	T.29N.,R.66W.,SEC 31,SENE,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0093	T.30N.,R.66W.,SEC 18,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0094	T.30N.,R.66W.,SEC 21,SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0095	T.30N.,R.66W.,SEC 26,SWNE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0096	T.30N.,R.66W.,SEC 29,S2NW,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0097	T.30N.,R.66W.,SEC 29,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0098	T.30N.,R.66W.,SEC 30,LOTS 2,3,4	Disposal	Disposal	Disposal	Disposal	Disposal
PL0098	T.30N.,R.67W.,SEC 25,S2NE,SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0099	T.21N.,R.67W.,SEC 23,NESW,N2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0100	T.22N.,R.67W.,SEC 19,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
PL0101	T.22N.,R.67W.,SEC 23,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0102	T.22N.,R.67W.,SEC 25,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0103	T.22N.,R.67W.,SEC 30,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0104	T.23N.,R.67W.,SEC 6,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
PL0105	T.23N.,R.67W.,SEC 19,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0106	T.24N.,R.67W.,SEC 2,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0107	T.24N.,R.67W.,SEC 15,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0108	T.24N.,R.67W.,SEC 23,E2SE T.24N.,R.67W.,SEC 24,SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0109	T.25N.,R.67W.,SEC 5,SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0110	T.25N.,R.67W.,SEC 9,N2NE,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0111	T.25N.,R.67W.,SEC 25,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0112	T.25N.,R.67W.,SEC 26,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0113	T.25N.,R.67W.,SEC 35,W2NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0114	T.26N.,R.67W.,SEC 3,LOT 4,SWNW,NWSW T.26N.,R.67W.,SEC 4,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0114	T.27N.,R.67W.,SEC 33,NESW,N2SE,SESE T.27N.,R.67W.,SEC 34,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0115	T.26N.,R.67W.,SEC 12,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0116	T.26N.,R.67W.,SEC 13,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0117	T.26N.,R.67W.,SEC 18,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0118	T.26N.,R.67W.,SEC 20,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0119	T.26N.,R.67W.,SEC 33,E2SE T.26N.,R.67W.,SEC 34,NE,E2NW,SW,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0120	T.27N.,R.66W.,SEC 18,LOT 4 T.27N.,R.66W.,SEC 2,LOTS 1 and 2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0121	T.27N.,R.67W.,SEC 10,NE,NWSE	Restricted	Restricted	Restricted	Disposal	Disposal
PL0122	T.27N.,R.67W.,SEC 19,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
PL0123	T.27N.,R.67W.,SEC 22,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0124	T.27N.,R.67W.,SEC 28,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0125	T.29N.,R.67W.,SEC 7,LOT 5	Retention BR	Retention BR	Retention BR	Retention BR	Retention BR

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
		WDL	WDL	WDL	WDL	WDL
PL0126	T.29N.,R.67W.,SEC 7,LOT 8	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0127	T.29N.,R.67W.,SEC 29,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0128	T.29N.,R.67W.,SEC 31,NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0129	T.30N.,R.67W.,SEC 8,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0130	T.30N.,R.67W.,SEC 18,LOT 2	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0131	T.30N.,R.67W.,SEC 25,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0132	T.30N.,R.67W.,SEC 35,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0133	T.20N.,R.68W.,SEC 17,S2SW T.20N.,R.68W.,SEC 18,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0134	T.20N.,R.68W.,SEC 35,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0135	T.21N.,R.68W.,SEC 2,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0136	T.21N.,R.68W.,SEC 4,LOTS 1,2,3,4,S2NE,SWNW,W2SW T.21N.,R.68W.,SEC 5,LOT 4,S2N2,S2 T.21N.,R.68W.,SEC 6,LOT 1,SENE T.21N.,R.68W.,SEC 8,E2,E2NW,NESW T.21N.,R.68W.,SEC 9,W2E2,W2,SESE	Retention	Retention	Disposal	Disposal	Disposal
PL0137	T.21N.,R.68W.,SEC 17,SENE	Retention	Retention	Disposal	Disposal	Disposal
PL0138	T.21N.,R.68W.,SEC 18,LOTS 3,4,SWNE,SENW,E2SW	Retention	Retention	Disposal	Disposal	Disposal
PL0138	T.21N.,R.69W.,SEC 11,E2SW,SE T.21N.,R.69W.,SEC 12,W2,W2SE,SESE T.21N.,R.69W.,SEC 13,N2N2,SENE,SENW,NESE T.21N.,R.69W.,SEC 14,N2NE,NENW	Retention	Retention	Disposal	Disposal	Disposal
PL0139	T.21N.,R.68W.,SEC 19,W2NE,SENE,E2SW,N2SE,SWSE T.21N.,R.68W.,SEC 20,S2N2,NESE T.21N.,R.68W.,SEC 21,SW	Retention	Retention	Disposal	Disposal	Disposal
PL0140	T.21N.,R.68W.,SEC 26,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0141	T.21N.,R.68W.,SEC 29,W2E2,E2W2	Retention	Retention	Disposal	Disposal	Disposal
PL0142	T.22N.,R.68W.,SEC 2,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0143	T.22N.,R.68W.,SEC 15,N2N2,S2NW,N2SW	Retention	Disposal	Disposal	Disposal	Disposal
PL0144	T.22N.,R.68W.,SEC 21,SESE T.22N.,R.68W.,SEC 22,S2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0145	T.22N.,R.68W.,SEC 22,SENW	Retention	Disposal	Disposal	Disposal	Disposal
PL0146	T.22N.,R.68W.,SEC 24,S2NE	Restricted	Restricted	Restricted	Restricted	Restricted
PL0147	T.23N.,R.68W.,SEC 25,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0148	T.23N.,R.68W.,SEC 33,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0149	T.25N.,R.68W.,SEC 1,LOTS 1,2,S2NE,E2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0150	T.26N.,R.68W.,SEC 8,S2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0151	T.26N.,R.68W.,SEC 35,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0152	T.27N.,R.68W.,SEC 25,SENE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0153	T.27N.,R.68W.,SEC 27,SW T.27N.,R.68W.,SEC 28,SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0154	T.27N.,R.68W.,SEC 28,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0155	T.28N.,R.68W.,SEC 4,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0156	T.28N.,R.68W.,SEC 18,S2NE,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0157	T.29N.,R.68W.,SEC 1,LOT 5 T.29N.,R.68W.,SEC 2,SESE T.29N.,R.68W.,SEC 11,N2NE T.29N.,R.68W.,SEC 12,LOT 1	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0158	T.29N.,R.68W.,SEC 5,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
PL0159	T.29N.,R.68W.,SEC 9,E2SE	Retention	Retention	Retention	Retention	Retention
PL0160	T.29N.,R.68W.,SEC 22,N2NW	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0161	T.29N.,R.68W.,SEC 23,SWNE,SENW,NESW	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0162	T.29N.,R.68W.,SEC 24,NENW	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0163	T.29N.,R.68W.,SEC 24,SESW,SWSE	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0164	T.29N.,R.68W.,SEC 30,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
PL0165	T.29N.,R.68W.,SEC 31,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0166	T.29N.,R.68W.,SEC 31,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0167	T.30N.,R.68W.,SEC 4,W2SE,SESE	Retention	Restricted	Disposal	Disposal	Disposal
PL0168	T.30N.,R.68W.,SEC 7,LOTS 5,6,7	Restricted	Restricted	Restricted	Disposal	Disposal
PL0169	T.30N.,R.68W.,SEC 8,NESE	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0170	T.30N.,R.68W.,SEC 10,W2NE,SENE,E2NW,N2SE	Retention PT BR WDL	Restricted	Disposal	Disposal	Disposal
PL0171	T.30N.,R.68W.,SEC 23,NWNE	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0172	T.30N.,R.68W.,SEC 26,LOTS 1,2	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL	Retention BR WDL
PL0173	T.30N.,R.68W.,SEC 30,LOT 1	Restricted	Restricted	Restricted	Restricted	Restricted
PL0174	T.30N.,R.68W.,SEC 32,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0175	T.20N.,R.69W.,SEC 1,LOTS 1,2,3,4,S2N2,S2	Retention	Retention	Disposal	Disposal	Disposal
PL0176	T.20N.,R.69W.,SEC 3,SESE T.20N.,R.69W.,SEC 10,N2N2,S2NE,SENW,NESW,N2SE T.20N.,R.69W.,SEC 11,N2N2,S2NE,SWNW,NWSW,N2SE T.20N.,R.69W.,SEC 12,SWNW,N2SW	Retention	Retention	Disposal	Disposal	Disposal
PL0177	T.20N.,R.69W.,SEC 5,LOTS 1,2,3,4,S2N2,S2	Retention	Retention	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.20N.,R.69W.,SEC 8,ALL					
PL0178	T.20N.,R.69W.,SEC 19,LOT 4,SESW T.20N.,R.69W.,SEC 30,LOT 1	Retention	Retention	Disposal	Disposal	Disposal
PL0179	T.21N.,R.69W.,SEC 23,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0180	T.21N.,R.69W.,SEC 2,S2NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0181	T.21N.,R.69W.,SEC 4,SWNE,S2NW,SW,NWSE T.21N.,R.69W.,SEC 6,SENE,N2SE,SESE T.21N.,R.69W.,SEC 7,NE T.21N.,R.69W.,SEC 8,N2 T.21N.,R.69W.,SEC 9,W2E2,W2	Retention	Retention	Disposal	Disposal	Disposal
PL0182	T.21N.,R.69W.,SEC 5,LOTS 2,3	Retention	Retention	Disposal	Disposal	Disposal
PL0182	T.22N.,R.69W.,SEC 29,S2SW T.22N.,R.69W.,SEC 30,SESE T.22N.,R.69W.,SEC 31,N2NE,SENE T.22N.,R.69W.,SEC 32,SENE,NW,N2S2,SESW,S2SE T.22N.,R.69W.,SEC 33,S2NW,N2S2	Retention	Retention	Disposal	Disposal	Disposal
PL0183	T.21N.,R.69W.,SEC 15,SWSW	Retention	Retention	Disposal	Disposal	Disposal
PL0184	T.21N.,R.69W.,SEC 17,S2 T.21N.,R.69W.,SEC 19,E2,SENW,E2SW T.21N.,R.69W.,SEC 20,N2NE,SWNE,NW,N2SW,SWSW,NWSE T.21N.,R.69W.,SEC 21,SENE,W2E2,W2 T.21N.,R.69W.,SEC 23,ALL T.21N.,R.69W.,SEC 25,N2,N2S2,SESE T.21N.,R.69W.,SEC 26,N2 T.21N.,R.69W.,SEC 27,N2 T.21N.,R.69W.,SEC 28,N2NE,SWNE,W2,SWSE T.21N.,R.69W.,SEC 29,W2W2,SESW T.21N.,R.69W.,SEC 30,NE,NENW,NESE T.21N.,R.69W.,SEC 32,NENW	Retention	Retention	Disposal	Disposal	Disposal
PL0185	T.21N.,R.69W.,SEC 19,LOT 1	Retention	Retention	Disposal	Disposal	Disposal
PL0185	T.21N.,R.70W.,SEC 24,NE,N2SE	Retention	Retention	Disposal	Disposal	Disposal
PL0186	T.21N.,R.69W.,SEC 31,W2NE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0187	T.21N.,R.69W.,SEC 31,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0188	T.21N.,R.69W.,SEC 34,N2NW	Retention	Retention	Disposal	Disposal	Disposal
PL0189	T.21N.,R.69W.,SEC 34,S2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0190	T.22N.,R.69W.,SEC 4,LOT 4,SWNW T.22N.,R.69W.,SEC 5,LOTS 1,2,3,4,S2N2,N2S2,S2SW T.22N.,R.69W.,SEC 6,LOTS 3,4,5,6,7,SENW,E2SW,SE	Retention	Retention	Disposal	Disposal	Disposal
PL0190	T.23N.,R.69W.,SEC 20,S2SW T.23N.,R.69W.,SEC 28,SWSW T.23N.,R.69W.,SEC 29,W2NE,SENE,W2,SE T.23N.,R.69W.,SEC 30,E2NE	Retention	Retention	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.23N.,R.69W.,SEC 31,LOT 4,E2NE,SWNE,SENW,E2SW,SE T.23N.,R.69W.,SEC 32,ALL T.23N.,R.69W.,SEC 33,NWNE,W2					
PL0190	T.22N.,R.70W.,SEC 1,LOTS 1,2,3,S2NE,SENW,E2SW,SWSW,SE T.22N.,R.70W.,SEC 2,N2NE,NENW	Retention	Retention	Disposal	Disposal	Disposal
PL0191	T.22N.,R.69W.,SEC 14,SWNW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0192	T.22N.,R.69W.,SEC 20,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0193	T.22N.,R.69W.,SEC 29,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0194	T.22N.,R.69W.,SEC 31,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0195	T.23N.,R.69W.,SEC 1,LOT 4,SWNW,W2SW T.23N.,R.69W.,SEC 2,LOTS 1,2,3,4,S2NE T.23N.,R.69W.,SEC 3,LOTS 1,2,3,4,S2N2,N2SW,SESW,W2SE T.23N.,R.69W.,SEC 4,LOTS 1,2,3,4,S2N2,NESW,N2SE T.23N.,R.69W.,SEC 5,LOTS 1,,2,3,4,S2N2,N2SW,SWSW,W2SE T.23N.,R.69W.,SEC 6,LOTS 1,2,3,S2NE,SE T.23N.,R.69W.,SEC 7,N2NE T.23N.,R.69W.,SEC 8,NWNW	Retention	Retention	Disposal	Disposal	Disposal
PL0195	T.24N.,R.69W.,SEC 10,S2SE T.24N.,R.69W.,SEC 11,S2SE T.24N.,R.69W.,SEC 14,W2 T.24N.,R.69W.,SEC 15,E2,E2W2,SWNW,W2SW T.24N.,R.69W.,SEC 17,SESE T.24N.,R.69W.,SEC 19,SESE T.24N.,R.69W.,SEC 20,E2E2,SWNE,SW,W2SE T.24N.,R.69W.,SEC 21,ALL T.24N.,R.69W.,SEC 22,ALL T.24N.,R.69W.,SEC 23,W2E2,W2 T.24N.,R.69W.,SEC 26,W2E2,W2 T.24N.,R.69W.,SEC 27,ALL T.24N.,R.69W.,SEC 28,ALL T.24N.,R.69W.,SEC 29,ALL T.24N.,R.69W.,SEC 30,LOTS 2,3,4,E2E2,SWNE,SENW,E2SW,W2SE T.24N.,R.69W.,SEC 31,LOTS 1,2,3,N2NE,E2W2,W2SE T.24N.,R.69W.,SEC 32,ALL T.24N.,R.69W.,SEC 33,ALL T.24N.,R.69W.,SEC 34,ALL T.24N.,R.69W.,SEC 35,N2N2,SWNW,SW,W2SE,SESE	Retention	Retention	Disposal	Disposal	Disposal
PL0195	T.24N.,R.70W.,SEC 25,SENE,E2SE	Retention	Retention	Disposal	Disposal	Disposal
PL0196	T.23N.,R.69W.,SEC 7,NESE T.23N.,R.69W.,SEC 8,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.23N.,R.69W.,SEC 17,NWNW					
PL0197	T.23N.,R.69W.,SEC 10,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0198	T.23N.,R.69W.,SEC 17,S2SE T.23N.,R.69W.,SEC 20,N2NE T.23N.,R.69W.,SEC 21,W2 T.23N.,R.69W.,SEC 28,SWNE,N2NW,SENW	Retention	Retention	Disposal	Disposal	Disposal
PL0199	T.23N.,R.69W.,SEC 18,LOTS 3,4,SENW,E2SW T.23N.,R.69W.,SEC 19,LOTS 1,2,3,NENW	Retention	Retention	Disposal	Disposal	Disposal
PL0199	T.23N.,R.70W.,SEC 1,LOTS 1,2,3,4,S2N2,SW,W2SE,SESE T.23N.,R.70W.,SEC 2,LOTS 1,2,S2NE,SE T.23N.,R.70W.,SEC 11,E2,E2SW T.23N.,R.70W.,SEC 13,ALL T.23N.,R.70W.,SEC 14,N2,SE T.23N.,R.70W.,SEC 24,N2,N2S2,S2SE	Retention	Retention	Disposal	Disposal	Disposal
PL0199	T.24N.,R.70W.,SEC 35,S2NE,SE	Retention	Retention	Disposal	Disposal	Disposal
PL0200	T.23N.,R.69W.,SEC 19,SWNE,NWSE	Retention	Retention	Disposal	Disposal	Disposal
PL0201	T.23N.,R.69W.,SEC 27,NWSW	Retention	Retention	Disposal	Disposal	Disposal
PL0202	T.23N.,R.69W.,SEC 30,NENW	Retention	Retention	Disposal	Disposal	Disposal
PL0202	T.23N.,R.70W.,SEC 25,S2NE,SESW,SE	Retention	Retention	Disposal	Disposal	Disposal
PL0203	T.23N.,R.69W.,SEC 30,NENW	Retention	Retention	Disposal	Disposal	Disposal
PL0204	T.24N.,R.69W.,SEC 2,LOTS 3,4,S2NW,SW T.24N.,R.69W.,SEC 11,NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0205	T.24N.,R.69W.,SEC 4,SENW,N2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0206	T.24N.,R.69W.,SEC 5,LOTS 3,4 T.24N.,R.69W.,SEC 6,LOTS 1,2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0206	T.25N.,R.69W.,SEC 31,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0207	T.24N.,R.69W.,SEC 5,S2SW T.24N.,R.69W.,SEC 6,LOT 7,SESW,S2SE T.24N.,R.69W.,SEC 7,E2NE T.24N.,R.69W.,SEC 8,N2N2,SWNE,S2NW,NWSW	Retention	Disposal	Disposal	Disposal	Disposal
PL0208	T.25N.,R.69W.,SEC 1,LOTS 3,4 T.25N.,R.69W.,SEC 2,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
PL0209	T.25N.,R.69W.,SEC 5,S2SW T.25N.,R.69W.,SEC 8,W2NE,SENE,NENW T.25N.,R.69W.,SEC 9,S2NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0210	T.25N.,R.69W.,SEC 6,LOT 4	Retention	Disposal	Disposal	Disposal	Disposal
PL0210	T.26N.,R.69W.,SEC 31,LOT 4,SESW,W2SE	Retention	Disposal	Disposal	Disposal	Disposal
PL0211	T.25N.,R.67W.,SEC 7,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
PL0212	T.25N.,R.69W.,SEC 11,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0213	T.26N.,R.69W.,SEC 7,NESW,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0214	T.26N.,R.69W.,SEC 10,N2S2,SESE	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0215	T.26N.,R.69W.,SEC 11,W2NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0216	T.26N.,R.69W.,SEC 14,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0217	T.26N.,R.69W.,SEC 19,LOT 3,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0218	T.29N.,R.69W.,SEC 31,LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0219	T.29N.,R.69W.,SEC 31,LOT 4,SESW,W2SE	Retention	Retention	Disposal	Disposal	Disposal
PL0220	T.26N.,R.69W.,SEC 31,SENE T.26N.,R.69W.,SEC 32,SWNW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0221	T.27N.,R.69W.,SEC 4,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
PL0222	T.27N.,R.69W.,SEC 6,LOT 7	Disposal	Disposal	Disposal	Disposal	Disposal
PL0223	T.27N.,R.69W.,SEC 8,NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0224	T.27N.,R.69W.,SEC 12,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0225	T.27N.,R.69W.,SEC 12,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0226	T.27N.,R.69W.,SEC 17,E2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0227	T.27N.,R.69W.,SEC 22,SWNE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0228	T.28N.,R.69W.,SEC 2,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0229	T.28N.,R.69W.,SEC 3,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0230	T.28N.,R.69W.,SEC 6,LOT 4	Disposal	Disposal	Disposal	Disposal	Disposal
PL0231	T.28N.,R.69W.,SEC 7,LOT 2,NE,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0232	T.28N.,R.69W.,SEC 7,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0233	T.28N.,R.69W.,SEC 14,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0234	T.28N.,R.69W.,SEC 18,LOT 4 T.28N.,R.69W.,SEC 19,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
PL0235	T.28N.,R.69W.,SEC 21,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0236	T.28N.,R.69W.,SEC 29,W2NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0237	T.29N.,R.69W.,SEC 12,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0238	T.29N.,R.69W.,SEC 13,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0239	T.29N.,R.69W.,SEC 15,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0240	T.29N.,R.69W.,SEC 25,S2NE,SENW,E2SW,SWSW,W2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0241	T.29N.,R.69W.,SEC 33,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0242	T.29N.,R.69W.,SEC 34,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0243	T.29N.,R.69W.,SEC 35,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0244	T.30N.,R.69W.,SEC 3,LOT 5	Disposal	Disposal	Disposal	Disposal	Disposal
PL0245	T.30N.,R.69W.,SEC 4,LOT 3,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0246	T.30N.,R.69W.,SEC 6,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
PL0247	T.30N.,R.69W.,SEC 8,S2NE,N2SE T.30N.,R.69W.,SEC 9,NWSW	Retention	Disposal	Disposal	Disposal	Disposal
PL0248	T.30N.,R.69W.,SEC 9,NENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0249	T.20N.,R.70W.,SEC 1,LOTS 3,4,SENW	Retention	Retention	Disposal	Disposal	Disposal
PL0250	T.20N.,R.70W.,SEC 2,LOT 3	Disposal	Disposal	Disposal	Disposal	Disposal
PL0250	T.21N.,R.70W.,SEC 35,E2,E2SW	Retention	Retention	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0251	T.20N.,R.70W.,SEC 3,LOTS 1,2	Disposal	Retention	Disposal	Disposal	Disposal
PL0251	T.21N.,R.70W.,SEC 27,S2SE,SE T.21N.,R.70W.,SEC 28,S2SW,SE T.21N.,R.70W.,SEC 29,SESE T.21N.,R.70W.,SEC 32,NESE T.21N.,R.70W.,SEC 33,N2,N2S2 T.21N.,R.70W.,SEC 34,E2,NW,N2SW,SESW	Retention	Retention	Disposal	Disposal	Disposal
PL0252	T.20N.,R.70W.,SEC 6,LOTS 3,6,7,SWNE,SENW,E2SW,W2SE T.20N.,R.70W.,SEC 7,LOTS 1,2,3,4,E2W2,SE T.20N.,R.70W.,SEC 8,SWNE,W2,W2SE,SESE T.20N.,R.70W.,SEC 9,SWNE,S2NW,E2SW,SWSW,NWSE T.20N.,R.70W.,SEC 17,ALL T.20N.,R.70W.,SEC 18,LOT 1,E2,E2NW,NESW T.20N.,R.70W.,SEC 20,NE	Disposal	Retention	Disposal	Disposal	Disposal
PL0253	T.20N.,R.70W.,SEC 10,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0254	T.20N.,R.70W.,SEC 10,SWNW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0255	T.20N.,R.70W.,SEC 11,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0256	T.20N.,R.70W.,SEC 12,NESW,SE T.20N.,R.70W.,SEC 13,E2 T.20N.,R.70W.,SEC 24,N2NE,NENW	Retention	Retention	Disposal	Disposal	Disposal
PL0257	T.20N.,R.70W.,SEC 19,SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0258	T.20N.,R.70W.,SEC 22,S2 T.20N.,R.70W.,SEC 23,S2	Retention	Retention	Disposal	Disposal	Disposal
PL0259	T.20N.,R.70W.,SEC 25,S2NE,SE	Retention	Retention	Disposal	Disposal	Disposal
PL0260	T.20N.,R.70W.,SEC 28,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0261	T.20N.,R.70W.,SEC 33,SWNE,SESW,W2SE,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0262	T.20N.,R.70W.,SEC 34,W2NW,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0263	T.20N.,R.70W.,SEC 35,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0264	T.21N.,R.70W.,SEC 11,E2NE,NESE T.21N.,R.70W.,SEC 12,W2NW,SENW,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0265	T.21N.,R.70W.,SEC 11,SESW T.21N.,R.70W.,SEC 14,NW,N2SW,SWSW T.21N.,R.70W.,SEC 15,SWNW,NWSW,S2S2 T.21N.,R.70W.,SEC 22,NE,N2NW,SENW T.21N.,R.70W.,SEC 23,W2NW,SENW,NESW	Retention	Retention	Disposal	Disposal	Disposal
PL0266	T.21N.,R.70W.,SEC 20,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0267	T.21N.,R.70W.,SEC 22,SESW,S2SE T.21N.,R.70W.,SEC 27,N2NE	Retention	Retention	Disposal	Disposal	Disposal
PL0268	T.21N.,R.70W.,SEC 25,SWNE,S2NW,NESW,N2SE,SESE	Retention	Retention	Disposal	Disposal	Disposal
PL0269	T.21N.,R.70W.,SEC 26,SWNE,SENW,NESW	Retention	Retention	Disposal	Disposal	Disposal
PL0270	T.21N.,R.70W.,SEC 30,LOTS 3,4,E2W2 T.21N.,R.70W.,SEC 31,LOTS 1,2,3,4,NE,E2NW	Retention	Retention	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
	T.21N.,R.70W.,SEC 32,E2NW,SWNW					
PL0271	T.22N.,R.70W.,SEC 3,LOTS 1,3,4 T.22N.,R.70W.,SEC 4,LOTS 1,2,3,4,S2N2 T.22N.,R.70W.,SEC 5,LOTS 1,2,S2NE T.22N.,R.70W.,SEC 6,LOT 2	Retention	Retention	Disposal	Disposal	Disposal
PL0271	T.23N.,R.70W.,SEC 28,S2SW T.23N.,R.70W.,SEC 29,S2S2 T.23N.,R.70W.,SEC 30,SESE T.23N.,R.70W.,SEC 31,E2,SESW T.23N.,R.70W.,SEC 32,ALL T.23N.,R.70W.,SEC 33,N2,SW,E2SE,SWSE T.23N.,R.70W.,SEC 34,W2NW,S2 T.23N.,R.70W.,SEC 35,W2SW,SESW	Retention	Retention	Disposal	Disposal	Disposal
PL0272	T.22N.,R.70W.,SEC 5,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0273	T.22N.,R.70W.,SEC 7,SESE T.22N.,R.70W.,SEC 8,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0274	T.22N.,R.70W.,SEC 11,S2NE,N2SE T.22N.,R.70W.,SEC 12,SWNW,NWSW	Retention	Retention	Disposal	Disposal	Disposal
PL0275	T.22N.,R.70W.,SEC 14,NWSW	Retention	Retention	Disposal	Disposal	Disposal
PL0276	T.22N.,R.70W.,SEC 15,SWNE	Retention	Retention	Disposal	Disposal	Disposal
PL0277	T.22N.,R.70W.,SEC 19,E2SE,SWSE T.22N.,R.70W.,SEC 20,SW	Retention	Retention	Disposal	Disposal	Disposal
PL0278	T.22N.,R.70W.,SEC 25,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0279	T.22N.,R.70W.,SEC 32,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0280	T.23N.,R.70W.,SEC 4,LOTS 2,3,SWNE,SENW,NWSE	Retention	Retention	Disposal	Disposal	Disposal
PL0280	T.24N.,R.70W.,SEC 29,S2S2 T.24N.,R.70W.,SEC 32,N2NE,SENE,N2S2 T.24N.,R.70W.,SEC 33,S2N2,NWNW,S2	Retention	Retention	Disposal	Disposal	Disposal
PL0281	T.23N.,R.70W.,SEC 8,SWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0282	T.23N.,R.70W.,SEC 17,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0283	T.23N.,R.70W.,SEC 21,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0284	T.23N.,R.70W.,SEC 25,NWSW T.23N.,R.70W.,SEC 26,NESE	Retention	Retention	Disposal	Disposal	Disposal
PL0285	T.23N.,R.70W.,SEC 27,S2NE,E2NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0286	T.24N.,R.70W.,SEC 1,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
PL0287	T.24N.,R.70W.,SEC 1,NWSW T.24N.,R.70W.,SEC 2,LOT 1,SENE,N2SE,SESE	Retention	Disposal	Disposal	Disposal	Disposal
PL0288	T.24N.,R.70W.,SEC 3,N2 OF LOT 2,SE OF LOT 2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0289	T.24N.,R.70W.,SEC 3,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0290	T.24N.,R.70W.,SEC 3,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0291	T.24N.,R.70W.,SEC 13,NENW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0292	T.24N.,R.70W.,SEC 14,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0293	T.24N.,R.70W.,SEC 15,S2NW,N2SW,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0294	T.24N.,R.70W.,SEC 20,SWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0295	T.24N.,R.70W.,SEC 20,SENE T.24N.,R.70W.,SEC 21,S2NW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0296	T.24N.,R.70W.,SEC 22,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0297	T.24N.,R.70W.,SEC 23,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0298	T.24N.,R.70W.,SEC 34,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0299	T.25N.,R.70W.,SEC 11,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0300	T.25N.,R.70W.,SEC 12,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0301	T.25N.,R.70W.,SEC 15,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0302	T.25N.,R.70W.,SEC 15,S2SE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0303	T.25N.,R.70W.,SEC 17,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0304	T.25N.,R.70W.,SEC 17,SESW,W2SE T.25N.,R.70W.,SEC 20,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0305	T.25N.,R.70W.,SEC 20,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0306	T.26N.,R.70W.,SEC 26,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0307	T.26N.,R.70W.,SEC 27,NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0308	T.26N.,R.70W.,SEC 34,SWSW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0309	T.26N.,R.70W.,SEC 35,SENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0310	T.27N.,R.70W.,SEC 2,S2SW,SWSE T.27N.,R.70W.,SEC 11,NW	Retention	Disposal	Disposal	Disposal	Disposal
PL0311	T.27N.,R.70W.,SEC 5,LOT 4 T.27N.,R.70W.,SEC 6,LOT 1	Disposal	Disposal	Disposal	Disposal	Disposal
PL0311	T.28N.,R.70W.,SEC 31,SESE T.28N.,R.70W.,SEC 32,W2SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0312	T.27N.,R.70W.,SEC 4,NESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0313	T.27N.,R.70W.,SEC 9,S2NE,E2NW	Retention	Disposal	Disposal	Disposal	Disposal
PL0314	T.27N.,R.70W.,SEC 10,SW	Retention	Disposal	Disposal	Disposal	Disposal
PL0315	T.27N.,R.70W.,SEC 12,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0316	T.27N.,R.70W.,SEC 12,NESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0317	T.27N.,R.70W.,SEC 13,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0318	T.27N.,R.70W.,SEC 13,SESW	Retention	Disposal	Disposal	Disposal	Disposal
PL0319	T.27N.,R.70W.,SEC 14,SWNE,E2SW,W2SE T.27N.,R.70W.,SEC 23,NE,E2NW,SWNW T.27N.,R.70W.,SEC 24,SWNW	Retention	Disposal	Disposal	Disposal	Disposal
PL0320	T.27N.,R.70W.,SEC 14,W2NW T.27N.,R.70W.,SEC 15,NENE	Retention	Disposal	Disposal	Disposal	Disposal
PL0321	T.27N.,R.70W.,SEC 15,S2S2 T.27N.,R.70W.,SEC 22,NWNE,NENW	Retention	Disposal	Disposal	Disposal	Disposal
PL0322	T.27N.,R.70W.,SEC 20,NWSW	Disposal	Disposal	Disposal	Disposal	Disposal

Appendix G
Land Disposal (Continued)

Parcel #	Legal Description	Alternative A Status	Alternative B Status	Alternative C Status	Alternative D Status	Alternative E Status (Preferred Alternative)
PL0323	T.27N.,R.70W.,SEC 21,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0324	T.27N.,R.70W.,SEC 21,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0325	T.27N.,R.70W.,SEC 22,NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0326	T.27N.,R.70W.,SEC 26,NWNE,NENW	Retention	Disposal	Disposal	Disposal	Disposal
PL0327	T.27N.,R.70W.,SEC 28,NWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0328	T.28N.,R.70W.,SEC 5,LOTS 1,2,3,4	Disposal	Disposal	Disposal	Disposal	Disposal
PL0328	T.29N.,R.70W.,SEC 32,SESE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0329	T.28N.,R.70W.,SEC 14,NE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0330	T.28N.,R.70W.,SEC 21,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0331	T.28N.,R.70W.,SEC 23,SESW T.28N.,R.70W.,SEC 26,E2W2	Disposal	Disposal	Disposal	Disposal	Disposal
PL0332	T.28N.,R.70W.,SEC 28,W2NW T.28N.,R.70W.,SEC 29,NENE	Retention	Disposal	Disposal	Disposal	Disposal
PL0333	T.30N.,R.70W.,SEC 1,SWNE,SENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0334	T.30N.,R.70W.,SEC 1,NWSW T.30N.,R.70W.,SEC 2,SESW,E2SE,SWSE T.30N.,R.70W.,SEC 11,NWNE,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0335	T.30N.,R.70W.,SEC 1,S2SE T.30N.,R.70W.,SEC 12,N2NE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0336	T.30N.,R.70W.,SEC 11,SE T.30N.,R.70W.,SEC 12,SWNW,NWSW	Retention	Disposal	Disposal	Disposal	Disposal
PL0337	T.30N.,R.70W.,SEC 8,NWNW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0338	T.30N.,R.70W.,SEC 7,N2SE T.30N.,R.70W.,SEC 8,W2SW,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0339	T.25N.,R.70W.,SEC 24,SW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0339	T.28N.,R.65W.,SEC 5,LOT 4,SWNW,SESW T.28N.,R.65W.,SEC 6,SESW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0340	T.22N.,R.65W.,SEC 4,NWSE	Sold	Sold	Sold	Sold	Sold
PL0341	T.27N.,R.66W.,SEC 1,LOTS 6,7,8,9,SWNE,SESW T.27N.,R.66W.,SEC 12,LOT 6,NENW	Disposal	Disposal	Disposal	Disposal	Disposal
PL0342	T.27N.,R.65W.,SEC 8,REMNANT IN NENE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0343	T.27N.,R.65W.,SEC 8,REMNANT IN NWSE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0344	T.26N.,R.66W.,SEC 8,SWNE	Disposal	Disposal	Disposal	Disposal	Disposal
PL0345	T.27N.,R.66W.,SEC 12,REMNANT IN SWSW	Disposal	Disposal	Disposal	Disposal	Disposal

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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX H

Areas Closed to Grazing

Appendix H
Areas Closed to Grazing

Site Location	Legal Description	Acres
Grave Springs Campground	T. 40 N., R. 87 W. Sec. 1: NW¼SE¼	48.0
Buffalo Creek Campground	T. 40 N., R. 87 W. Sec. 13: SW¼NE¼	22.0
Muddy Mountain Environmental Education Area	T. 31 N., R 78 W. Sec. 6: S½SW¼ Sec. 7: SW¼NE¼, W½ SE¼ NE¼, W¼	1,440
	T. 31 N., R 79 W. Sec. 1: S½S½ Sec. 11: NE¼NE¼, S½NE¼, SE¼ Sec. 12: N½, NW¼SW¼, S½SW¼ Sec. 14: NW¼NE¼ Sec. 18: NW¼NE¼, NW¼NW¼	
Trappers Route #1	T. 30 N., R. 82 W. Sec. 8: N½SE¼	18
Bolton Creek Environmental Education Area/Wildlife Habitat Management Unit	T. 31. N., R. 81 W. Sec. 33: Part NW¼SE¼ south and east of boundary fence and west of rim rock, S½SE¼, part E½SW¼ east of boundary fence Sec. 34: SW diagonal of S½ of SW¼	200
	T. 30 N., R. 81 W. Sec. 3: NE diagonal of NE¼NW¼	
Spring/Bump-Sullivan Wildlife Management Unit	T. 22 N., R. 62 W. Sec. 11: SW¼ Sec. 14: N½NW¼, SE¼SW¼ Sec. 23: NW¼NE¼ Sec. 21: NW¼SE¼, S½SE¼, E½SW¼ Sec. 28: N½NW¼	600
Clarkson Hill (760 Ranch) Acquisition	T. 31 N., R 82 W. Sec. 2: E½E½ Sec. 11: W½NE¼ and NE¼NE¼ west of the centerline of the main river channel	193.42
	T. 32 N., R 82 W. Sec. 35: Parcel of land in the SE¼SE¼ west of the centerline of the main river channel	
Poison Spider Off-Highway Vehicle Park	T. 33 N., R. 81 W. Sec. 4: Part of S½ SE¼ south of boundary fence Sec. 9: SW diagonal NE¼, SE¼NE¼, W½NE¼, part NW¼SE¼ north and west of boundary fence	187.49
Bessemer Bend Historic Site	T. 32 N., R. 81 W. Sec. 3: SW¼ of Lot 2	6.15
Goldeneye Wildlife Habitat Management and Recreation Area	T. 35 N., R. 82 W. Sec. 7: E½E½ Sec. 8: N½N½, SE¼NE¼, NE¼SE¼, NW¼SW¼, S½SW¼	511

Site Location	Legal Description	Acres
Aspen Highlands Urban Interface Area – Garfield Peak	T. 33 N., R. 87 W. Sec. 19: Lots 5 and 6, SE¼ Sec. 20: SW¼SE¼ Sec. 27: SW¼NE¼, SE¼NW¼ Sec. 28: E½NE¼, SW¼NE¼, NW¼SE¼, S½NW¼, SW¼, SW¼SE¼ Sec. 29: S½NE¼, SE¼NW¼, W½SE¼, NE¼SE¼ Sec. 30: SW¼NE¼, NW¼SE¼, SE¼SE¼ Sec. 31: SW¼NE¼, NW¼SE¼, SE¼SE¼, SE¼NW¼, NE¼SW¼ Sec. 32: E½NW¼, W½NE¼, NE¼SW¼, NE¼SE¼ Sec. 33: NE¼, E½NW¼, SW¼NW¼, S½ Sec. 34: N½NW¼	2,517.64
	T. 33 N., R. 88 W. Sec. 24: Lot 1, SW¼NE¼, W½SE¼, S½NW¼ Sec. 25: E½NE¼, NE¼SE¼	
Scattered Tracts – Grazing Use Cancelled or Grazing Applications Denied Primarily Due to Suitability	Grazing decision by Albert Martin for public land near Hartville, Wyoming T. 27 N., R. 66 W. Sec. 12: Lot 3, S½SE¼	112
	Grazing decision by Suzanne Horr for public land near Old Fort Fetterman Road T. 29 N., R. 74 W. Sec. 26: E½NE¼ T. 30 N., R. 74 W. Sec. 33: W½SE¼	160
	Grand Total	**6,015.70**

E East
N North
R Range
S South
Sec. Section
T Township
W West

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APPENDIX I

Wyoming Bureau of Land Management Mitigation Guidelines for Surface-Disturbing and Disruptive Activities

Appendix I
Wyoming Bureau of Land Management
Mitigation Guidelines for Surface-Disturbing and Disruptive Activities

Wyoming Mitigation Guidelines are a compilation of practices employed by Bureau of Land Management (BLM) to mitigate impacts from surface disturbance. They apply to activities such as road or pipeline construction, range improvements, and permitted recreation activities. The guidelines are designed to protect resources such as soils and vegetation, wildlife habitat, and cultural or historic properties. The guidelines are presented as an appendix of the Resource Management Plan (RMP) Environmental Impact Statement (EIS) for easy reference as they apply to many resources and derive from many laws. All BLM RMPs have included these guidelines as appendices. Public comment on the guidelines, per se, has not been requested. The guidelines are not land use decisions; rather they are examples of mitigation measures that could be applied, as appropriate, based on site-specific National Environmental Policy Act (NEPA) analysis for individual proposals. Comment on the use and application of specific mitigation measures can be made during the NEPA process for individual proposals. Because mitigation measures change or are modified, based on new information, the guidelines are updated periodically for all Field Offices in Wyoming.

These guidelines are primarily for the purpose of attaining statewide consistency in how requirements are determined for avoiding and mitigating environmental impacts and resource and land use conflicts. Consistency in this sense does not mean that identical requirements would be applied for all similar types of land use activities that may cause similar types of impacts. Nor does it mean that the requirements or guidelines for a single land use activity would be identical in all areas.

There are two ways the mitigation guidelines are used in the RMP and EIS process: (1) as part of the planning criteria in developing the RMP alternatives; and (2) in the analytical processes of both developing the alternatives and analyzing the impacts of the alternatives. In the first case, an assumption is made that any one or more of the mitigations will be appropriately included as conditions of relevant actions being proposed or considered in each alternative. In the second case, the mitigations are used (1) to develop a baseline for measuring and comparing impacts among the alternatives; (2) to identify other actions and alternatives that should be considered; and (3) to help determine whether more stringent or less stringent mitigations should be considered.

The EIS for the RMP does not decide or dictate the exact wording or inclusion of these guidelines. Rather, the guidelines are used in the RMP EIS process as a tool to help develop the RMP alternatives and to provide a baseline for comparative impact analysis in arriving at RMP decisions. These guidelines will be used in the same manner in analyzing activity plans and other site-specific proposals. These guidelines and their wording are matters of policy. As such, specific wording is subject to change primarily through administrative review, not through the RMP EIS process. Any further changes that may be made in the continuing refinement of these guidelines and any development of program-specific standard stipulations will be handled in another forum, including appropriate public involvement and input.

Purpose

The purposes of the "Wyoming BLM Mitigation Guidelines" are (1) to reserve, for the BLM, the right to modify the operations of all surface and other human presence disturbance activities as part of the statutory requirements for environmental protection; and (2) to inform a potential lessee, permittee, or operator of the requirements that must be met when using BLM-administered public lands. These guidelines have been written in a format that will allow for (1) their direct use as stipulations, and (2) the

addition of specific or specialized mitigation following the submission of a detailed plan of development or other project proposal, and an environmental analysis.

Those resource activities or programs currently without a standardized set of permit or operation stipulations can use the mitigation guidelines as stipulations or as conditions of approval, or as a baseline for developing specific stipulations for a given activity or program.

Because use of the mitigation guidelines was integrated into the RMP EIS process and will be integrated into the site-specific environmental analysis process, the application of stipulations or mitigation requirements derived through the guidelines will provide more consistency with planning decisions and plan implementation than has occurred in the past. Application of the mitigation guidelines to all surface and other human presence disturbance activities concerning BLM-administered public lands and resources will provide more uniformity in mitigation than has occurred in the past.

Mitigation Guidelines

Surface Disturbance Mitigation Guideline

Surface disturbance will be prohibited in any of the following areas or conditions. Exception, waiver, or modification of this limitation may be approved in writing, including documented supporting analysis, by the authorized officer.

- Slopes in excess of 25 percent.
- Within important scenic areas (Class I and II Visual Resource Management Areas).
- Within 500 feet of surface water and/or riparian areas.
- Within either one-quarter mile or the visual horizon (whichever is closer) of historic trails.
- Construction with frozen material or during periods when the soil material is saturated or when watershed damage is likely to occur.

Guidance

The intent of the surface disturbance mitigation guideline is to inform interested parties (potential lessees, permittees, or operators) that when one or more of the five conditions exist, surface-disturbing activities will be prohibited unless or until a permittee or his designated representative and the surface management agency arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation will occur prior to development.

Specific criteria (e.g., 500 feet from water) have been established based upon the best information available. However, such items as geographical areas and seasons must be delineated at the field level. Exception, waiver, or modification of requirements developed from this guideline must be based upon environmental analysis of proposals (e.g., activity plans, plans of development, plans of operation, and applications for permit to drill) and, if necessary, must allow for other mitigation to be applied on a site-specific basis.

Wildlife Mitigation Guideline

A. To protect important big game winter habitat, activities or surface use will not be allowed from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria apply to defined big game birthing areas from May 1 to June 30.

Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects.

Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the authorized officer.

B. To protect important raptor and/or sage and sharp-tailed grouse nesting habitat, activities or surface use will not be allowed from February 1 to July 31 within certain areas encompassed by the authorization. The same criteria apply to defined raptor and game bird winter concentration areas from November 15 to April 30.
Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects.

Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the authorized officer.

C. No activities or surface use will be allowed on that portion of the authorization area identified within (legal description) for the purpose of protecting (e.g., sage/sharp-tailed grouse breeding grounds, and/or other species/activities) habitat.
Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the authorized officer.

D. Portions of the authorized use area legally described as (legal description), are known or suspected to be essential habitat for (name) which is a threatened or endangered species. Prior to conducting any onsite activities, the lessee/permittee will be required to conduct inventories or studies in accordance with BLM and U.S. Fish and Wildlife Service guidelines to verify the presence or absence of this species. In the event that (name) occurrence is identified, the lessee/permittee will be required to modify operational plans to include the protection requirements of this species and its habitat (e.g., seasonal use restrictions, occupancy limitations, facility design modifications).

Guidance

The Wildlife Mitigation Guideline is intended to provide two basic types of protection: seasonal restriction and prohibition of activities or surface use (2c). Item 2d is specific to situations involving threatened or endangered species. Legal descriptions will ultimately be required and should be measurable and legally definable. There are no minimum subdivision requirements at this time. The area delineated can and should be defined as necessary, based upon current biological data, prior to the time of processing an application and issuing the use authorization. The legal description must eventually become a part of the condition for approval of the permit, plan of development, and/or other use authorization.

The seasonal restriction section identifies three example groups of species and delineates three similar time frame restrictions. The big game species including elk, moose, deer, antelope, and bighorn sheep, all require protection of crucial winter range between November 15 and April 30. Elk and bighorn sheep also require protection from disturbance from May 1 to June 30, when they typically occupy distinct calving and lambing areas. Raptors include eagles, accipiters, falcons (peregrine, prairie, and merlin), buteos (ferruginous and Swainson's hawks), osprey, and burrowing owls. The raptors and sage and sharp-tailed grouse require nesting protection between February 1 and July 31. The same birds often require protection from disturbance from November 15 through April 30 while they occupy winter concentration areas.

Item 2c, the prohibition of activity or surface use, is intended for protection of specific wildlife habitat areas or values within the use area that cannot be protected by using seasonal restrictions. These areas or

values must be factors that limit life-cycle activities (e.g., sage-grouse strutting grounds, known threatened and endangered species habitat).

Exception, waiver, or modification of requirements developed from this guideline must be based upon environmental analysis of proposals (e.g., activity plans, plans of development, plans of operation, applications for permit to drill) and, if necessary, must allow for other mitigation to be applied on a site-specific basis.

Cultural Resource Mitigation Guideline

When a proposed discretionary land use has potential for affecting the characteristics which qualify a cultural property for the National Register of Historic Places (NRHP), mitigation will be considered. In accordance with Section 106 of the Historic Preservation Act, procedures specified in 36 Code of Federal Regulation (CFR) 800 will be used in consultation with the Wyoming State Historic Preservation Officer and the Advisory Council on Historic Preservation in arriving at determinations regarding the need and type of mitigation to be required.

Guidance

The preferred strategy for treating potential adverse effects on cultural properties is "avoidance." If avoidance involves project relocation, the new project area may also require cultural resource inventory. If avoidance is imprudent or unfeasible, appropriate mitigation may include excavation (data recovery), stabilization, monitoring, protection barriers and signs, or other physical and administrative measures.

Reports documenting results of cultural resource inventory, evaluation, and the establishment of mitigation alternatives (if necessary) shall be written according to standards contained in BLM Manuals, the cultural resource permit stipulations, and in other policy issued by the BLM. These reports must provide sufficient information for Section 106 consultation. Reports shall be reviewed for adequacy by the appropriate BLM cultural resource specialist. If cultural properties on, or eligible for, the NRHP are located within these areas of potential impact and cannot be avoided, the authorized officer shall begin the Section 106 consultation process in accordance with the procedures contained in 36 CFR 800.

Mitigation measures shall be implemented according to the mitigation plan approved by the BLM authorized officer. Such plans are usually prepared by the land use applicant according to BLM specifications. Mitigation plans will be reviewed as part of Section 106 consultation for NRHP eligible or listed properties. The extent and nature of recommended mitigation shall be commensurate with the significance of the cultural resource involved and the anticipated extent of damage. Reasonable costs for mitigation will be borne by the land use applicant. Mitigation must be cost effective and realistic. It must consider project requirements and limitations, input from concerned parties, and be BLM approved or BLM formulated.

Mitigation of paleontological and natural history sites will be treated on a case-by-case basis. Factors such as site significance, economics, safety, and project urgency must be taken into account when making a decision to mitigate. Authority to protect (through mitigation) such values is provided for in FLPMA, Section 102(a)(8). When avoidance is not possible, appropriate mitigation may include excavation (data recovery), stabilization, monitoring, protection barriers and signs, or other physical and administrative protection measures.

Special Resource Mitigation Guideline

To protect (resource value), activities or surface use will not be allowed (i.e., within a specific distance of the resource value or between date to date) in (legal description).

Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects.

Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the authorized officer.

Example Resource Categories (Select or identify category and specific resource value):

a. Recreation areas.
b. Special natural history or paleontological features.
c. Special management areas.
d. Sections of major rivers.
e. Prior existing rights-of-way.
f. Occupied dwellings.
g. Other (specify).

Guidance

The *Special Resource Mitigation Guideline* is intended for use only in site-specific situations where one of the first three general mitigation guidelines will not adequately address the concern. The resource value, location, and specific restrictions must be clearly identified. A detailed plan addressing specific mitigation and special restrictions will be required prior to disturbance or development and will become a condition for approval of the permit, plan of development, or other use authorization.

Exception, waiver, or modification of requirements developed from this guideline must be based upon environmental analysis of proposals (e.g., activity plans, plans of development, plans of operation, applications for permit to drill) and, if necessary, must allow for other mitigation to be applied on a site-specific basis.

No Surface Occupancy Guideline

No Surface Occupancy (NSO) will be allowed on the following described lands (legal description) because of (resource value).

Example Resource Categories (Select or identify category and specific resource value):

a. Recreation Areas (e.g., campgrounds, historic trails, national monuments).
b. Major reservoirs/dams.
c. Special management area (e.g., known threatened or endangered species habitat, areas suitable for consideration for wild and scenic rivers designation).
d. Other (specify).

Guidance

The *No Surface Occupancy Mitigation Guideline* is intended for use only when other mitigation is determined insufficient to adequately protect the public interest and is the only alternative to "no development" or "no leasing." The legal description and resource value of concern must be identified and be tied to an NSO land use planning decision.

Waiver of, or exception(s) to, the NSO requirement will be subject to the same test used to initially justify its imposition. If, upon evaluation of a site-specific proposal, it is found that less restrictive mitigation would adequately protect the public interest or value of concern, then a waiver or exception to the NSO

requirement is possible. The record must show that because conditions or uses have changed, less restrictive requirements will protect the public interest. An environmental analysis must be conducted and documented (e.g., environmental assessment, environmental impact statement, etc., as necessary) in order to provide the basis for a waiver or exception to an NSO planning decision. Modification of the NSO requirement will pertain only to refinement or correction of the location(s) to which it applied. If the waiver, exception, or modification is found to be consistent with the intent of the planning decision, it may be granted. If found inconsistent with the intent of the planning decision, a plan amendment would be required before the waiver, exception, or modification could be granted.

When considering the "no development" or "no leasing" option, a rigorous test must be met and fully documented in the record. This test must be based upon stringent standards described in the land use planning document. Since rejection of all development rights is more severe than the most restrictive mitigation requirement, the record must show that consideration was given to development subject to reasonable mitigation, including "no surface occupancy." The record must also show that other mitigation was determined to be insufficient to adequately protect the public interest. A "no development" or "no leasing" decision should not be made solely because it appears that conventional methods of development would be unfeasible, especially where an NSO restriction may be acceptable to a potential permittee. In such cases, the potential permittee should have the opportunity to decide whether or not to go ahead with the proposal (or accept the use authorization), recognizing that an NSO restriction is involved.

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APPENDIX J

Technical Support Document for Air Quality

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Appendix J
Technical Support Document for Air Quality

This technical support document describes the process used to conduct air quality impact analysis for the Casper Resource Management Plan (RMP) revision, Draft Environmental Impact Statement (EIS). This document will serve as the basis for subsequent air quality impact analyses of other alternatives and the preferred alternative. Appendix J is divided into the following six sections:

1.0 Regulatory Framework
2.0 Agency Roles and Authorities
3.0 Existing Air Quality
4.0 Air Quality Impact Analysis
5.0 Emission Calculations
6.0 References

Copies of this technical support document and accompanying data files are available upon request from the Bureau of Land Management (BLM) Casper Field Office.

1.0 REGULATORY FRAMEWORK

For quantitative analysis, the air quality criteria discussed in the paragraphs below apply. Although the criteria listed do not apply to the qualitative analysis presented in the Casper Air Quality Analysis, they are identified here for reference purposes. The basic framework for controlling air pollutants in the United States is mandated by the 1970 Clean Air Act (CAA) and its amendments and the 1999 Regional Haze Regulations. The CAA addresses criteria air pollutants, state and national ambient air quality standards for criteria air pollutants, and the Prevention of Significant Deterioration program. The Regional Haze Regulations address visibility impairment.

Ambient Air Quality Constituents

Air pollutants addressed in this study include criteria pollutants, hazardous air pollutants (HAP), and sulfur and nitrogen compounds, which could cause visibility impairment or atmospheric deposition impacts.

Criteria Pollutants

Criteria pollutants are those for which national standards of concentration have been established. Ambient air concentrations of these constituents greater than the standards represent a risk to human health. Criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), particulate matter (PM_{10}, $PM_{2.5}$), and lead, each of which is listed below.

Carbon Monoxide. CO is an odorless, colorless gas formed during any combustion process, such as operation of engines, fireplaces, and furnaces. High concentrations of CO affect the oxygen-carrying capacity of the blood and can lead to unconsciousness and asphyxiation. Wildfires are natural sources of CO.

Nitrogen Dioxide. NO_2 is a red-brown gas formed during operation of internal combustion engines. Such engines emit a mixture of nitrogen gases, collectively called nitrogen oxides (NO_x). NO_x can contribute to brown cloud conditions and can convert to ammonium nitrate particles and nitric acid, which

can cause visibility impairment and acid rain. Bacterial action in soil can be a natural source of nitrogen compounds.

Sulfur Dioxide. SO_2 forms during combustion from trace levels of sulfur in coal or diesel fuel. It can convert to ammonium sulfate and sulfuric acid, which can cause visibility impairment and acid rain. Volcanoes are natural sources of SO_2. Anthropogenic sources include refineries and power plants.

Ozone. O_3 is a gas that generally is not emitted directly into the atmosphere, but is formed from NO_x and volatile reactive organic compound (VOC) emissions. As stated above, internal combustion engines are the main source of NO_x. VOCs, such as terpenes, are very reactive. Sources of VOCs include, but are not limited to, paint, varnish, and types of vegetation. The faint acrid smell common after thunderstorms is caused by ozone formation caused by lightning. O_3 is a strong oxidizing chemical that can burn lungs and eyes, as well as damage plants.

Particulate Matter. Particulate matter (e.g., soil particles, hair, pollen) are essentially small particles suspended in the air that settle to the ground slowly and may be re-suspended if disturbed. Separate allowable concentration levels for particulate matter are based on the relative size of the particle:

- PM_{10} particles, particles with diameters of less than 10 micrometers, are small enough to be inhaled and can cause adverse health impacts.
- $PM_{2.5}$ particles, particles with diameters of less than 2.5 micrometers, are so small that they can be drawn deeply into the lungs and cause serious health problems. Particles of this size also are the main cause of visibility impairment.

Lead. Before the widespread use of unleaded fuel in automobiles, lead particles were emitted from automobile tailpipes. Lead is not considered in this RMP/EIS because no proposed projects are expected to emit lead. The lead standard also will not be addressed in this appendix because lead is not a current concern; it will, however, be considered in future projects.

Hazardous Air Pollutants

Although HAPs, including N-hexane, ethylbenzene, toluene, xylene, formaldehyde, and benzene, do not have ambient air quality standards, the U.S. Environmental Protection Agency (EPA) has issued reference concentrations for evaluating the inhalation risk for cancerous and noncancerous health impacts, known as reference concentrations for chronic inhalation.

The EIS associated with the Casper RMP is a National Environmental Policy Act (NEPA) document and not a regulatory document, but the Record of Decision is binding and a "public record" (see 40 Code of Regulations [CFR] 1505.2). In addition, there are regulatory issues that should be taken into account in preparing this EIS and ensuing project-specific Weiss. Actual regulation of HAPs is achieved through compliance with the applicable maximum achievable control technology (MACT) standards and not through ambient air quality standards. Regulatory agencies implement control through Section 112 programs, specifically Section 112(g) case-by-case MACT determinations based on 40 CFR Part 63, Subpart B, and Section 112(d) MACT emission standards.

Any source that emits or has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAPs is considered a major source and will require a Title V, Part 70, operating permit review and permit. This may include either a case-by-case 112(g) MACT determination, if the source is new or has had major modifications and no applicable MACT emission standard has been promulgated, or compliance with an applicable MACT emission standard. Specific regulations that may apply in the planning area include 40 CFR Part 63 Subpart HH, National Emission Standards for

Hazardous Air Pollutants From Oil and Natural Gas Production Facilities; 40 CFR Part 63 Subpart HHH, National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities; and 40 CFR Part 63 Subpart ZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. This last regulation, new in 2004, affects source categories using reciprocating engines for gas compression.

HAP emissions are associated with industrial activities, such as oil and gas operations, refineries, paint shops, dry cleaning facilities, and woodworking shops.

Because this analysis is qualitative, no specific analyses of either short- or long-term HAP impacts are made.

Atmospheric Deposition Constituents

Sulfur and nitrogen compounds that can be deposited in terrestrial and aquatic ecosystems include nitric acid, nitrate, ammonium, and sulfate. Nitric acid and nitrate are not emitted directly into the air, but form in the atmosphere from industrial and automotive emissions of NOx. Sulfate is formed in the atmosphere from industrial emission of sulfur dioxide (SO_2). Deposition of nitric acid, nitrate, and sulfate can adversely impact plant growth, soil chemistry, lichens, aquatic environments, and petroglyphs. Ammonium is primarily associated with feedlots and agricultural fertilization. Ammonium deposits can affect terrestrial and aquatic vegetation. Although deposition may be beneficial as a fertilizer, it can adversely impact the timing of plant growth and dormancy.

Although this analysis will be qualitative, future specific projects will require quantitative analyses using the criteria listed below.

Wyoming and National Ambient Air Quality Standards

Wyoming Ambient Air Quality Standards (WAAQS) and National Ambient Air Quality Standards (NAAQS) are health-based standards for the maximum concentration of air pollutants at all locations to which the public has access. The WAAQS and NAAQS are legally enforceable standards. Concentrations above the WAAQS and NAAQS represent a risk to human health. State standards must be as strict as, or stricter than, federal standards.

The EPA has developed standards for each pollutant for a specific averaging time (see Table J-1). Short averaging times (1, 3, and 24 hours) addresses short-term exposure, while the annual standards address long-term exposure. Longer-term standards are set to lower allowable concentrations than are short-term standards to recognize the cumulative impacts of long-term exposure.

Prevention of Significant Deterioration

The goal of the Prevention of Significant Deterioration (PSD) program is to ensure that air quality in areas with clean air does not significantly deteriorate, while a margin for future industrial growth is maintained. Under the PSD program, each area in the United States is classified by the air quality in that region according to the following system:

- **PSD Class I Areas.** Areas with pristine air quality, such as wilderness areas, national parks, and some Indian reservations, are accorded the strictest protection. Only very small incremental increases in pollutant concentrations are allowed in order to maintain the very clean air quality in these areas.

- **PSD Class II Areas.** Essentially, all areas that are not designated as Class I are designated as Class II. Moderate incremental increases in pollutant concentrations are allowed, although the concentrations are not allowed to reach the concentrations set by Wyoming and federal standards (WAAQS and NAAQS).
- **PSD Class III Areas.** No areas have been designated yet as Class III. A larger incremental increase in pollutant concentrations would be allowed, up to the WAAQS and NAAQS.

Table J-1. National and Wyoming Ambient Air Quality Standards

Pollutant	Average Time	NAAQS ($\mu g/m^3$)	WAAQS ($\mu g/m^3$)
Carbon Monoxide (CO)	1 hour	40,000	40,000
	8 hours	10,000	10,000
Nitrogen Dioxide (NO_2)	Annual	100	100
Ozone (O_3)	1 hour	235	235
	8 hours	157	157
Particulate Matter (PM_{10})	24 hours	150	150
	Annual	50	50
Particulate Matter ($PM_{2.5}$)	24 hours	65	65
	Annual	15	15
Sulfur Dioxide (SO_2)	3 hours	1,300[1]	1,300
	24 hours	365	260
	Annual	80	60
Hydrogen Sulfide (H_2S)	½ hour[2]	-	70
	½ hour[3]	-	40

Sources: Wyoming DEQ 2004; EPA 2005

[1]Secondary standard only, as there is no 3-hour federal primary standard for SO_2.

[2]Average not to be exceeded more than two times per year.

[3]Average not to be exceeded more than two times in any 5 consecutive days.

$\mu g/m^3$ micrograms per cubic meter

NAAQS National Ambient Air Quality Standards

WAAQS Wyoming Ambient Air Quality Standards

Table J-2 provides the incremental increases allowed for specific pollutants in Class I and Class II areas.

Comparisons of potential PM_{10}, NO_2, and SO_2 concentrations with PSD increments are intended to evaluate a threshold of concern only and do not represent a regulatory PSD increment consumption analysis. Regulatory PSD increment consumption analyses are solely the responsibility of the State of Wyoming, which has been granted primacy (with EPA oversight) under the CAA.

In project-specific EISs, the BLM does not expect that a PSD analysis will be performed; rather, the PSD standards are used as a reference only to give the public a better understanding of the level of potential impact.

Table J-2. Prevention of Significant Deterioration Increments

Pollutant	Average Period	PSD Increment Class I	PSD Increment Class II
Sulfur Dioxide SO_2	3-hours 24-hours Annual	25 5 2l	512 91 20
Particulate Matter PM_{10}	24-hours Annual	8 4	30 17
Nitrogen Dioxide NO_2	Annual	2.5	2.5
Carbon Monoxide CO	1-hour 8-hours	None None	None None
Lead	3-months	None	None

Source: Wyoming DEQ 2004

PSD Prevention of Significant Deterioration

Regional Haze Regulations

Visibility impairment in the form of regional haze obscures the clarity, color, texture, and form of what we see. Haze-causing pollutants (mostly fine particles) are directly emitted into the atmosphere or are formed when gases emitted into the air form particles as they are carried downwind. Emissions from human-caused and natural sources can be carried great distances, contributing to regional haze. The Wyoming Department of Environmental Quality–Air Quality Division (DEQ AQD) submitted its Regional Haze State Implementation Plan (SIP) in accordance with 40 CFR, Part 51.309, in December 2003. The EPA has not taken action yet on this SIP.

Visual range, one of several ways to express visibility, is the farthest distance at which a person can distinguish a dark landscape feature from a light background, such as the sky. Without human-caused visibility impairment, natural visual range is estimated to average about 110 to 115 miles in the western United States and 60 to 80 miles in the eastern United States (Malm 1999).

The EPA developed regional haze regulations in response to the CAA amendments of 1977 and 1990. These regulations are intended to maintain visibility on the least-impaired days and to improve visibility on the most-impaired days in mandatory federal Class I areas across the United States, so that visibility in these areas is returned to natural conditions by the year 2064. These regulations require states to submit a regional haze SIP and progress reports to demonstrate reasonable progress toward the 2064 goal.

Applicability to the Casper Area

Air pollution impacts are limited by local, state, tribal, and federal air quality regulations, standards, and implementation plans established under the CAA and administered by the Wyoming DEQ AQD with oversight from the EPA. Air quality regulations require that proposed new, or modified existing, air pollutant emission stationary sources (including oil and gas compression facilities) undergo a permitting review before their construction can begin. Therefore, the Wyoming DEQ AQD has the primary authority and responsibility to review permit applications and to require emission permits, fees, and control devices before construction or start of operation.

Fugitive dust and exhaust from construction activities, along with air pollutants emitted during operation (for example, well operations, booster [field] and pipeline [sales] compressor engines associated with natural gas wells), are potential causes of air quality impacts. These issues are more likely to generate

public concern where natural gas development activities occur near residential areas or near sensitive Class I and Class II areas.

The U.S. Forest Service (USFS), the National Park Service (NPS), and the U.S. Fish and Wildlife Service (USFWS), located throughout Wyoming, also have expressed concerns about potential atmospheric deposition (acid rain) and visibility impacts within downwind PSD Class I and PSD Class II sensitive areas under their administrations.

The NAAQS and the WAAQS are health-based standards for the maximum acceptable concentrations of air pollutants at locations to which the public has access. The analysis of the proposed alternatives must demonstrate continued compliance with all applicable local, state, tribal, and federal air quality standards. Existing air quality throughout the project area is in attainment of all ambient air quality standards, as demonstrated by the relatively low concentration levels presented in Table J-3.

Air quality regulations require that stationary proposed new or modified existing air pollutant emission sources (including oil and gas compression facilities) undergo a permitting review before their construction can begin. Therefore, the Wyoming DEQ AQD has been given primary authority over and responsibility for reviewing permit applications and for requiring emission permits, fees, and control device before construction and (or) operation. In addition, the U.S. Congress (through CAA Section 116) authorized local, state, and tribal air quality regulatory agencies to establish air pollution control requirements more (but not less) stringent than federal requirements. Also, under both the Federal Land Policy and Management Act and the CAA, the BLM cannot authorize any activity that would not conform to all applicable local, state, tribal, and federal air quality laws, regulations, standards, and implementation plans.

Given the project area's current attainment status, future development projects that have the potential to emit more than 250 tons per year of any criteria pollutant (or certain listed sources that have the potential to emit more than 100 tons per year) would be required to undergo a site-specific regulatory PSD increment consumption analysis under the federal New Source Review permitting regulations. Development projects that require PSD permits also may be required by the applicable air quality regulatory agencies to incorporate additional emission control measures (including a best available control technology [BACT] analysis and determination) to ensure protection of air quality resources and to demonstrate that the combined impacts of all PSD sources will not exceed the allowable incremental air quality impacts for NO_2, PM_{10}, and SO_2. Minor sources having emissions below the cutoff rates mentioned above do not require PSD permits; nevertheless, their emissions consume increment.

A regulatory PSD increment consumption analysis may be conducted, either as part of a New Source Review or independently. The determination of PSD increment consumption is a legal responsibility of the applicable air quality regulatory agencies, with EPA oversight. In addition, an analysis of cumulative impacts due to all existing sources and the permit applicant's sources is required during a New Source Review to demonstrate that applicable ambient air quality standards will be met during the operational lifetime of the permit applicant's operations.

Table J-3. Background Concentrations and Applicable Ambient Air Quality Standards

Pollutant/Monitoring Station (Monitor ID)	Average Time/ Measurement	Maximum Concentration by Year (µg/m^3)			NAAQS (µg/m^3)
		2002	2003	2004	
Nitrogen Dioxide (ppm)					
Antelope Site 3, Converse County (56009081942602-1)	Annual	N/A	0.004	0.004	0.053
$PM_{2.5}$ (µg/m^3)					
Antelope Site 3, Converse County (56009081988101-1)	Annual 24 Hours	3.4 15	4.3 29	3.3 11	15 65
PM_{10} (µg/m^3)					
Casper, Natrona County (56025000181102)	Annual	17	24	17	50
Laramie River Power Plant, Platte County (56031080581102)	Annual	24	21	21	50
Antelope Site 5, Converse County (56009085081102)	Annual	25	24	26	50
Antelope Site 6, Converse County (56009085181102)	Annual	27	26	30	50
North Antelope Na-5, Campbell County (56005087081102-2)	Annual	28	24	26	50
North Antelope/Rochelle Coal, Gillette, Campbell County (56005091081102)	Annual	24	27	24	50
Casper, Natrona County (56025000181102)	24 Hours	44	194	60	150
Laramie River Power Plant, Platte County (56031080581102)	24 Hours	78	92	127	150
Antelope Site 5, Converse County (56009085081102)	24 Hours	124	112	65	150
Antelope Site 6, Converse County (56009085181102)	24 Hours	104	121	93	150
North Antelope Na-5, Campbell County (56005087081102-2)	24 Hours	125	100	115	150
North Antelope/Rochelle Coal, Gillette, Campbell County (56005091081102)	24 Hours	135	116	111	150

Source: EPA 2005

µg/m^3 micrograms per cubic meter
ID Identification
NAAQS National Ambient Air Quality Standards
N/A not applicable
PM_{10} particulate matter less than 10 microns in diameter
$PM_{2.5}$ particulate matter less than 2.5 microns in diameter
ppm parts per million

Sources subject to the PSD permit review procedure also are required to demonstrate potential impacts on air quality-related values (AQRV). These include visibility impacts, degradation of mountain lakes due to atmospheric deposition (acid rain), and impacts on sensitive flora and fauna in Class I areas. The CAA also provides specific visibility protection procedures for the mandatory federal Class I areas designated by the U.S. Congress on August 7, 1977, which included wilderness areas greater than 5,000 acres in size, as well as national parks and national memorial parks greater than 6,000 acres in size as of that date.

2.0 AGENCY ROLES AND AUTHORITIES

U.S. Environmental Protection Agency

The EPA administers the federal CAA (42 U.S. Code [U.S.C.] 7401 et seq.) to maintain the NAAQS that protect human health and to preserve the rural air quality in the region by ensuring the PSD Class I and Class II increments for SO_2, NO_2, and PM_{10} are not exceeded. The EPA has delegated this CAA authority to the State of Wyoming.

Wyoming Department of Environmental Quality

Wyoming regulates pollutants emitted into the air through the Wyoming Environmental Quality Act (W.S. 35-11-101 et seq.). Wyoming also is authorized by an approved SIP to administer all requirements of the PSD permit program under the CAA. In addition, the approved Wyoming SIP contains a number of programs that provide for the implementation, maintenance, and enforcement of the NAAQS, including a New Source Review program for minor source permitting that requires, among other things, an application of BACT for all new or modified sources, regardless of size or source category. Included, as well, are authorities for the control of particulate emissions, such as including fugitive particulate emissions from haul roads, access roads, or general facility boundaries. Wyoming also has been delegated the responsibility for operating an approved ambient air quality monitoring network for the purpose of demonstrating compliance with the NAAQS and the WAAQS.

Bureau of Land Management

NEPA requires that federal agencies consider mitigation of direct, indirect, and cumulative impacts during their preparation of an EIS (BLM Land Use Planning Manual 1601). Under the CAA, federal agencies must comply with SIPs regarding the control and abatement of air pollution. Before approval of RMPs or amendments to RMPs, the state director is to submit any known inconsistencies with SIPs to the governor of that state. If the governor of the state recommends changes in the proposed RMP or amendment to meet SIP requirements, the state director shall give the public an opportunity to comment on those recommendations (BLM Land Use Planning Manual, Section 1610.3-2.).

U.S. Forest Service

The USFS administers national forests, which include several wilderness areas that could be affected by direct impacts associated with the project, such as the Bridger and Fitzpatrick wilderness areas which have mandatory federal Class I designations. In addition, the Class II Cloud Peaks wilderness area should be included in the planning area analysis. As federal land mangers, the USFS could act as a consultant to recommend that the BLM impact analysis results, or any future EPA- or state-administered PSD refined impact analysis results (if justified), trigger adverse impairment status. If the USFS determines impairment of wilderness areas, the BLM, the state, and (or) the EPA might need to mitigate this predicted adverse air quality impact.

National Park Service

One area administered by the NPS with a mandatory federal Class I area designation, Wind Cave National Park, could be affected by direct impacts associated with the Casper Field Office BLM emissions. As federal land managers, the NPS could act as a consultant to recommend that the BLM impact analysis results, or any future EPA- or state-administered PSD refined impact analysis results (if justified), trigger adverse impairment status. If the NPS determines impairment of NPS-administered Class I areas, the BLM, the state, and (or) EPA might need to mitigate this predicted adverse air quality impact.

3.0 EXISTING AIR QUALITY

As described in Chapter 3.2, Affected Environment (Air Resources), specific air quality monitoring is not conducted throughout most of the project area, but air quality conditions are considered to be generally good, as characterized by limited air pollution emission sources (few industrial facilities and residential emissions in the relatively small communities and isolated ranches) and good atmospheric dispersion conditions, resulting in relatively low air pollutant concentrations. Table J-3 summarizes the ambient air quality background concentrations in the planning area. This information was provided by the Wyoming DEQ. Although monitoring is conducted primarily in urban or industrial areas, the data selected are considered to be the best available representation of background air pollutant concentrations throughout the project area. The assumed background pollutant concentrations are below applicable ambient air quality standard for all pollutants and averaging times (although ozone levels approach the standards). Federal standards, Wyoming standards, and PSD increment values are presented in Tables J-1 and J-2.

4.0 AIR QUALITY IMPACT ANALYSIS

As described in Chapter 4, Environmental Consequences (Air Quality), a qualitative emission comparison approach was used for this assessment. A qualitative method was selected because of a lack of specific project information on location, types, and magnitude of potential projects.

Emissions calculations were based on the best available engineering data and assumptions, emission inventory procedures, and professional and scientific judgment. However, where specific data or procedures were not available, activity assumptions were incorporated, as documented in the emission spreadsheets.

For any future projects, significance criteria for potential air quality impacts will include local, state, tribal, and federally enforced legal requirements to ensure that air pollutant concentrations remain within specific allowable levels. Table J-1 presents these requirements and legal limits.

Because the potential air pollutant emission sources comprise many small sources spread out over a very large area, discrete visible plumes are not likely to impact the distant sensitive areas, but the potential for cumulative visibility impacts (increased regional haze) is a concern. Regional haze degradation is caused by fine particles' and gases' scattering and absorbing light. Potential changes to regional haze are calculated in terms of a perceptible "just noticeable change" (1.0 deciview) in visibility when compared to background conditions in mandatory federal PSD Class I areas.

It is important to note that before actual development could occur, the applicable air quality regulatory agencies (including the state, tribe, or the EPA) would need to review specific air pollutant emissions preconstruction permit applications that examine potential project-specific air quality impacts. As part of these permit reviews (depending on source size), the air quality regulatory agencies could require additional air quality impact analyses or mitigation measures. Thus, before development occurred, additional site-specific air quality analyses would be performed to ensure protection of air quality. Federal land managers would require a demonstration that potential effects from proposed projects would not adversely impact AQRV (including visibility) in sensitive Class I and Class II areas.

5.0 EMISSION CALCULATIONS

When reviewing the emission inventory, it is important to understand that assumptions were made regarding development. For example, there is uncertainty regarding ultimate development of energy resources (e.g., number of wells, equipment used, specific locations of wells, etc.). In general, the assumptions that were made would tend to result in a conservatively high estimate of emissions. For instance, given the number of sources included in this analysis, the likelihood that all emission sources

would actually operate at their reasonable, foreseeable maximum emission rates over an entire year (or even 24 hours) is small.

Summary emission inventories for each of the BLM activities for all of the alternatives are found in Chapter 4.2, Air Quality Impact Assessment. Activity data used to estimate emissions for proposed emission sources were obtained from Casper Field Office staff and NEPA analyses performed for BLM actions within Wyoming that are similar to those associated with the actions proposed in this RMP/EIS (BLM 2002; BLM 2005b). Emission factors used to estimate proposed emission were obtained from (1) the EPA NONROAD Emissions Model (EPA 2004), (2) Wyoming DEQ AQD BACT levels for natural gas-fired internal combustion engines (Hanify 2006 and Wyoming DEQ 2000), (3) MOBILE6 emissions models for on-road vehicles (EPA 2003), and, (4) special studies on fugitive dust emissions (EPA 2001).

The analysis includes emissions estimates for the following activities: (1) oil development, (2) CBNG and conventional natural gas development, (3) coal mine development, (4) salable and locatable minerals development, (5) renewable energy development, (6) livestock management activities, (7) vegetation management, (8) fire management (including prescribed fire), (9) forest and woodlands activities, (10) rights-of-way, (11) OHV use, and (12) resource roads. Activities related to cultural resources, paleontology, recreation, noxious and invasive weed control, and wildlife and fish would produce inconsequential amounts of air emissions.

Assumptions Used in Developing Emissions for the Casper RMP

The following assumptions were used in the emission calculations:

- All emission sources operated at their reasonably foreseeable maximum emission rates (as identified in the other resource sections of this document) simultaneously throughout the area.
- All producing coalbed natural gas (CBNG) and conventional oil and gas wells projected in the RFD and existing currently were assumed to be fully operational and to remain operating, except for normal projected well closures throughout the area (well numbers were provided by the Casper Field Office).
- However, it is possible that conditions close to this could occur in some isolated areas. For oil, gas, and CBNG wells development of new federal producing wells was assumed to occur at a uniform rate through 2020.
- Induced or secondary growth related to increases in vehicle miles traveled is not included in the emissions inventory. Only activities directly related to BLM actions are considered.
- Stationary sources associated with oil and gas development would operate at emission levels based on currently observed BACT levels, and compressor stations for natural gas and CBNG would be equipped with nonselective catalytic reduction (NSCR) catalyst.
- Activity data associated with management actions other than those related to conventional and CBNG wells were averaged over the entire analysis period to produce annual average emissions, except for renewable energy development, where the single development activity was assumed to occur in one year (2011) for modeling purposes.
- EPA off-road emission standards were used to estimate emissions for non-road sources in project years 2006, 2011, and 2020. This approach simulates the replacement of existing sources by new lower-emitting equipment with future EPA off-road emission standards.
- Use of water application as a Best Management Practice (BMP) would reduce fugitive dust emissions from ground-disturbing activities during construction and reclamation activities and maintenance of roads at project sites by 50 percent from uncontrolled levels. For a complete list

of Standard Practices, BMPs, and Guidelines for Surface-Disturbing Activities, refer to Appendix K.

- BMPs for surface-disturbing activities are applied under all alternatives. Appendix K lists standard practices that are used in the planning area to mitigate adverse impacts caused by surface-disturbing activities. These BMPs provide protection to soil resources and minimize adverse impacts to soil stability, compaction, and productivity.

Detailed descriptions for emissions estimation for each activity follow. Individual tables of air emissions for all BLM activities were calculated in spreadsheets for each activity. These spreadsheets are available on CD.

Oil and Gas Wells Emissions Estimation

Criteria pollutant emissions from oil, CBNG, and conventional natural gas wells development were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Estimated emissions from CBNG and conventional natural gas wells include the following:

- Fugitive dust and combustive emissions from well pad construction activities
- Fugitive dust and combustive emissions from road traffic
- Combustive emissions from natural gas-fired compressors
- Fugitive dust and combustive emissions from separators, dehydrators, and water-tank heater operations
- Fugitive dust and combustive emissions from compressor station visits
- Fugitive dust and combustive emissions from well workover operations
- Fugitive dust and combustive emissions from well and pipeline visits for inspection and repair
- VOC emissions from tank condensate and truck loadout (for natural gas wells only)
- Fugitive dust and combustive emissions from road-maintenance activities
- Fugitive dust and combustive emissions from road and well reclamation activities.

Estimated emissions from oil wells include the following:

- Fugitive dust and combustive emissions from well pad construction activities
- Fugitive dust and combustive emissions from road traffic
- Fugitive dust and combustive emissions from well workover operations
- Fugitive dust and combustive emissions from well and pipeline visits for inspection and repair
- Fugitive dust and combustive emissions from road maintenance activities.

The estimated numbers of oil and gas wells are provided by the Casper Field Office and shown in Table J-4 (this table accounts for net wells in operation and subtracts wells that have been abandoned).

Coal Mine Emission Estimation

Criteria pollutant emissions from coal mine operations were based on coal mine emissions data for Antelope Mine operations (MacDonald 2005) projected for the years 2011 and 2020.

Salable and Locatable Minerals Emission Estimation

Criteria pollutant emissions from salable and locatable minerals operations were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and emission studies from other BLM documents. Estimated emissions include the following:

- Fugitive dust emissions from sand and gravel or mineral processing
- Emissions from truck traffic on unpaved roads at the sand and gravel or mineral processing plant
- Emissions from batch-drop operations
- Fugitive dust and combustive emissions from development and reclamation activities.

Table J-4. Numbers of Oil and Gas Wells for the Casper Field Office

Well Type	Existing Wells 2001	Operational Wells 2011	Operational Wells 2020
Alternative A			
Coalbed Natural Gas	--	215	457
Natural Gas	506	733	957
Oil	2,867	3,184	3,498
Alternative B			
Coalbed Natural Gas	--	30	64
Natural Gas	506	529	546
Oil	2,867	2,901	2,927
Alternative C			
Coalbed Natural Gas	--	198	421
Natural Gas	506	713	916
Oil	2,867	3,158	3,441
Alternative D			
Coalbed Natural Gas	--	216	458
Natural Gas	506	729	949
Oil	2,867	3,179	3,487
Alternative E			
Coalbed Natural Gas	--	216	459
Natural Gas	506	731	953
Oil	2,867	3,182	3,493

Source: BLM 2005a

Renewable Energy Emissions Estimation

Criteria pollutant emissions from renewable energy activities were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Estimated emissions include the following:

- Fugitive dust and combustive emissions from wind-energy development
- Fugitive dust emissions from commuting vehicles on unpaved roads
- Combustive emissions from commuting vehicles on unpaved and paved roads.

Livestock Grazing Emissions Estimation

Criteria pollutant emissions from livestock grazing operations were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Estimated emissions include the following:

- Fugitive dust and combustive emissions from construction of springs, reservoirs and pits, wells, pipelines, fences, and reservoir maintenance
- Fugitive dust emissions from commuting vehicles on unpaved roads
- Combustive emissions from commuting vehicles on unpaved and paved roads.

Vegetation Emissions Estimation

Criteria pollutant emissions from vegetation operations were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Estimated emissions include the following:

- Fugitive dust and combustive emissions from vegetative mechanical treatments (excluding hand work)
- Fugitive dust emissions from commuting vehicles on unpaved roads
- Combustive emissions from commuting vehicles on unpaved and paved roads.

Fire-Management Emissions Estimation

Criteria pollutant emissions from fire-management activities were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Estimated emissions include the following:

- Fugitive dust and combustive emissions from mechanical treatments (hand work) and prescribed fire
- Fugitive dust emissions from commuting vehicles on unpaved roads
- Combustive emissions from commuting vehicles on unpaved and paved roads.

Forest and Woodlands Emissions Estimation

Criteria pollutant emissions from forest and woodlands activities were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Estimated emissions include the following:

- Fugitive dust and combustive emissions from silviculture treatments, forest products, weed treatments, and insect control
- Fugitive dust emissions from commuting vehicles on unpaved roads
- Combustive emissions from commuting vehicles on unpaved and paved roads.

Rights-of-Way Corridors Emissions Estimation

Criteria pollutant emissions from rights-of-way corridors operations were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Estimated emissions include the following:

- Fugitive dust and combustive emissions from construction of roads, telephone and fiber optics, powerlines, pipelines (mineral/water), communication sites, and other facilities
- Fugitive dust and combustive emissions for commuting vehicle road traffic.

Off-Highway Vehicles Emission Estimation

Criteria pollutant emissions from off-highway vehicles were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Off-highway vehicles include all terrain vehicles, motorcycles, and snowmobiles.

Road Maintenance Emission Estimation

Criteria pollutant emissions from road maintenance activities (excluding well road maintenance) were calculated based on data provided by the Casper Field Office and used best available information, BACT, AP-42, and the emission studies from other BLM documents. Estimated emissions include fugitive dust and combustive emissions resulting from the use of a grader. It was assumed that road maintenance would occur twice in the summer and once in the winter.

Summary of Emissions for All BLM Activities

Tables J-5 through J-124 summarizes the projected total annual emissions by resource. In most cases, year 2011 and 2020 are presented. These years vary for select resources.

Table J-5. Summary of Output - Alternative A
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	18.93	2.84	---	---	---	---	---
Heavy Equipment Combustive Emissions [a]	0.54	0.54	10.75	0.34	2.13	0.63	0.06
Commuting Vehicles - Construction	3.11	0.48	0.08	0.02	0.23	0.05	0.00
Subtotal: Construction	**22.58**	**3.86**	**10.83**	**0.35**	**2.35**	**0.68**	**0.07**
Natural Gas Compression - Operations [a]	8.69	8.69	48.29	0.10	96.58	48.29	33.80
Separator, Dehydrator & Water Tank Heaters - Operations [a]	0.01	0.01	0.16	0.00	0.13	0.01	0.00
Station Visits - Operations	8.31	1.24	0.04	0.00	0.42	0.03	0.00
Well Workover - Operations	2.36	0.37	0.53	0.00	0.13	0.03	0.00
Well & Pipeline visits for Inspection & Repair - Operations	5.40	0.81	0.02	0.00	0.27	0.02	0.00
Subtotal: Operations	**24.77**	**11.13**	**49.04**	**0.11**	**97.54**	**48.37**	**33.81**
Road Maintenance	1.36	0.15	0.38	0.00	0.09	0.03	0.00
Subtotal: Maintenance	**1.36**	**0.15**	**0.38**	**0.00**	**0.09**	**0.03**	**0.00**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**48.77**	**15.18**	**60.25**	**0.47**	**99.98**	**49.08**	**33.88**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-6. Summary of Output - Alternative A
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	18.93	2.84	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.54	0.54	10.75	0.34	2.13	0.63	0.06
Commuting Vehicles - Construction	3.11	0.48	0.08	0.02	0.23	0.05	0.00
Subtotal: Construction	**22.58**	**3.86**	**10.83**	**0.35**	**2.35**	**0.68**	**0.07**
Natural Gas Compression - Operations[a]	8.67	8.67	48.17	0.10	96.33	48.17	33.72
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.01	0.01	0.16	0.00	0.13	0.01	0.00
Station Visits - Operations	8.28	1.24	0.04	0.00	0.42	0.03	0.003
Well Workover - Operations	4.99	0.75	0.05	0.00	0.03	0.02	0.002
Well & Pipeline visits for Inspection & Repair - Operations	11.48	1.72	0.05	0.01	0.58	0.04	0.004
Subtotal: Operations	**33.43**	**12.39**	**48.46**	**0.11**	**97.51**	**48.26**	**33.73**
Road Maintenance	2.85	0.28	0.06	0.004	0.03	0.03	0.003
Subtotal: Maintenance	**2.85**	**0.28**	**0.06**	**0.004**	**0.03**	**0.03**	**0.003**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**58.92**	**16.57**	**59.35**	**0.47**	**99.90**	**48.97**	**33.80**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-7. Summary of Output - Alternative B
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	2.57	0.39	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.08	0.08	1.56	0.05	0.31	0.09	0.01
Commuting Vehicles - Construction	0.45	0.07	0.01	0.00	0.03	0.01	0.00
Subtotal: Construction	**3.10**	**0.53**	**1.57**	**0.05**	**0.35**	**0.10**	**0.01**
Natural Gas Compression - Operations[a]	1.20	1.20	6.65	0.01	13.30	6.65	4.65
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.00	0.00	0.02	0.00	0.02	0.00	0.00
Station Visits - Operations	1.14	0.17	0.01	0.00	0.06	0.00	0.00
Well Workover - Operations	0.33	0.05	0.07	0.00	0.02	0.00	0.00
Well & Pipeline visits for Inspection & Repair - Operations	0.76	0.11	0.00	0.00	0.04	0.00	0.00
Subtotal: Operations	**3.43**	**1.53**	**6.75**	**0.02**	**13.43**	**6.66**	**4.66**
Road Maintenance	0.19	0.02	0.05	0.00	0.01	0.00	0.00
Subtotal: Maintenance	**0.19**	**0.02**	**0.05**	**0.00**	**0.01**	**0.00**	**0.00**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**6.78**	**2.13**	**8.38**	**0.07**	**13.79**	**6.76**	**4.67**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-8. Summary of Output - Alternative B
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	2.57	0.39	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.08	0.08	1.56	0.05	0.31	0.09	0.01
Commuting Vehicles - Construction	0.45	0.07	0.01	0.00	0.03	0.01	0.00
Subtotal: Construction	**3.10**	**0.53**	**1.57**	**0.05**	**0.35**	**0.10**	**0.01**
Natural Gas Compression - Operations[a]	1.22	1.22	6.79	0.01	13.59	6.79	4.76
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.00	0.00	0.02	0.00	0.02	0.00	0.00
Station Visits - Operations	1.17	0.18	0.01	0.00	0.06	0.00	0.000
Well Workover - Operations	0.70	0.10	0.01	0.00	0.00	0.00	0.000
Well & Pipeline visits for Inspection & Repair - Operations	1.61	0.24	0.01	0.00	0.08	0.01	0.001
Subtotal: Operations	**4.70**	**1.75**	**6.83**	**0.02**	**13.75**	**6.81**	**4.76**
Road Maintenance	0.40	0.04	0.01	0.001	0.00	0.00	0.000
Subtotal: Maintenance	**0.40**	**0.04**	**0.01**	**0.001**	**0.00**	**0.00**	**0.000**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**8.25**	**2.36**	**8.42**	**0.07**	**14.10**	**6.91**	**4.77**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-9. Summary of Output - Alternative C
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction – Fugitive Dust	17.38	2.61	---	---	---	---	---
Heavy Equipment Combustive Emissions [a]	0.50	0.50	9.94	0.31	1.97	0.58	0.06
Commuting Vehicles – Construction	2.87	0.44	0.08	0.01	0.21	0.05	0.00
Subtotal: Construction	**20.76**	**3.55**	**10.02**	**0.33**	**2.18**	**0.63**	**0.06**
Natural Gas Compression – Operations [a]	7.96	7.96	44.24	0.09	88.49	44.24	30.97
Separator, Dehydrator & Water Tank Heaters – Operations [a]	0.01	0.01	0.14	0.00	0.12	0.01	0.00
Station Visits – Operations	7.61	1.14	0.03	0.00	0.39	0.02	0.00
Well Workover – Operations	2.18	0.34	0.48	0.00	0.12	0.03	0.00
Well & Pipeline visits for Inspection & Repair – Operations	4.98	0.75	0.02	0.00	0.25	0.02	0.00
Subtotal: Operations	**22.74**	**10.20**	**44.93**	**0.10**	**89.36**	**44.32**	**30.98**
Road Maintenance	1.25	0.14	0.35	0.00	0.08	0.03	0.00
Subtotal: Maintenance	**1.25**	**0.14**	**0.35**	**0.00**	**0.08**	**0.03**	**0.00**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**44.80**	**13.93**	**55.30**	**0.43**	**91.63**	**44.97**	**31.04**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-10. Summary of Output - Alternative C
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	17.38	2.61	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.50	0.50	9.94	0.31	1.97	0.58	0.06
Commuting Vehicles - Construction	2.87	0.44	0.08	0.01	0.21	0.05	0.00
Subtotal: Construction	**20.76**	**3.55**	**10.02**	**0.33**	**2.18**	**0.63**	**0.06**
Natural Gas Compression - Operations[a]	8.01	8.01	44.49	0.09	88.98	44.49	31.14
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.01	0.01	0.14	0.00	0.12	0.01	0.00
Station Visits - Operations	7.65	1.15	0.03	0.00	0.39	0.02	0.002
Well Workover - Operations	4.60	0.69	0.04	0.00	0.03	0.02	0.002
Well & Pipeline visits for Inspection & Repair - Operations	10.57	1.58	0.05	0.01	0.54	0.03	0.003
Subtotal: Operations	**30.84**	**11.44**	**44.76**	**0.10**	**90.06**	**44.58**	**31.15**
Road Maintenance	2.63	0.26	0.05	0.004	0.03	0.02	0.002
Subtotal: Maintenance	**2.63**	**0.26**	**0.05**	**0.004**	**0.03**	**0.02**	**0.002**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**54.28**	**15.29**	**54.83**	**0.43**	**92.27**	**45.23**	**31.22**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-11. Summary of Output - Alternative D
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction – Fugitive Dust	18.98	2.85	---	---	---	---	---
Heavy Equipment Combustive Emissions [a]	0.54	0.54	10.77	0.34	2.13	0.63	0.06
Commuting Vehicles – Construction	3.11	0.48	0.08	0.02	0.23	0.05	0.00
Subtotal: Construction	**22.63**	**3.87**	**10.86**	**0.36**	**2.36**	**0.68**	**0.07**
Natural Gas Compression – Operations [a]	8.69	8.69	48.29	0.10	96.58	48.29	33.80
Separator, Dehydrator & Water Tank Heaters – Operations [a]	0.01	0.01	0.16	0.00	0.13	0.01	0.00
Station Visits – Operations	8.31	1.24	0.04	0.00	0.42	0.03	0.00
Well Workover – Operations	2.37	0.37	0.53	0.00	0.13	0.03	0.00
Well & Pipeline visits for Inspection & Repair – Operations	5.41	0.81	0.02	0.00	0.28	0.02	0.00
Subtotal: Operations	**24.79**	**11.13**	**49.04**	**0.11**	**97.54**	**48.37**	**33.81**
Road Maintenance	1.36	0.15	0.38	0.00	0.09	0.03	0.00
Subtotal: Maintenance	**1.36**	**0.15**	**0.38**	**0.00**	**0.09**	**0.03**	**0.00**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**48.84**	**15.19**	**60.28**	**0.47**	**99.99**	**49.08**	**33.88**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-12. Summary of Output - Alternative D
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	18.98	2.85	---	---	---	---	---
Heavy Equipment Combustive Emissions [a]	0.54	0.54	10.77	0.34	2.13	0.63	0.06
Commuting Vehicles - Construction	3.11	0.48	0.08	0.02	0.23	0.05	0.00
Subtotal: Construction	**22.63**	**3.87**	**10.86**	**0.36**	**2.36**	**0.68**	**0.07**
Natural Gas Compression - Operations [a]	8.67	8.67	48.17	0.10	96.33	48.17	33.72
Separator, Dehydrator & Water Tank Heaters - Operations [a]	0.01	0.01	0.16	0.00	0.13	0.01	0.00
Station Visits - Operations	8.28	1.24	0.04	0.00	0.42	0.03	0.003
Well Workover - Operations	5.00	0.75	0.05	0.00	0.03	0.02	0.002
Well & Pipeline visits for Inspection & Repair - Operations	11.50	1.72	0.05	0.01	0.59	0.04	0.004
Subtotal: Operations	**33.47**	**12.40**	**48.46**	**0.11**	**97.51**	**48.26**	**33.73**
Road Maintenance	2.86	0.28	0.06	0.004	0.03	0.03	0.003
Subtotal: Maintenance	**2.86**	**0.28**	**0.06**	**0.004**	**0.03**	**0.03**	**0.003**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**59.01**	**16.59**	**59.37**	**0.47**	**99.90**	**48.97**	**33.80**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-13. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction – Fugitive Dust	19.02	2.85	---	---	---	---	---
Heavy Equipment Combustive Emissions [a]	0.54	0.54	10.80	0.34	2.13	0.63	0.06
Commuting Vehicles – Construction	3.12	0.48	0.08	0.02	0.23	0.05	0.00
Subtotal: Construction	**22.68**	**3.88**	**10.88**	**0.36**	**2.36**	**0.68**	**0.07**
Natural Gas Compression – Operations [a]	8.69	8.69	48.29	0.10	96.58	48.29	33.80
Separator, Dehydrator & Water Tank Heaters – Operations [a]	0.01	0.01	0.16	0.00	0.13	0.01	0.00
Station Visits – Operations	8.31	1.24	0.04	0.00	0.42	0.03	0.00
Well Workover – Operations	2.38	0.37	0.53	0.00	0.13	0.03	0.00
Well & Pipeline visits for Inspection & Repair – Operations	5.42	0.81	0.02	0.00	0.28	0.02	0.00
Subtotal: Operations	**24.81**	**11.13**	**49.04**	**0.11**	**97.54**	**48.37**	**33.81**
Road Maintenance	1.36	0.15	0.38	0.00	0.09	0.03	0.00
Subtotal: Maintenance	**1.36**	**0.15**	**0.38**	**0.00**	**0.09**	**0.03**	**0.00**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**48.91**	**15.20**	**60.30**	**0.47**	**99.99**	**49.09**	**33.88**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-14. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Coalbed Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	19.02	2.85	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.54	0.54	10.80	0.34	2.13	0.63	0.06
Commuting Vehicles - Construction	3.12	0.48	0.08	0.02	0.23	0.05	0.00
Subtotal: Construction	**22.68**	**3.88**	**10.88**	**0.36**	**2.36**	**0.68**	**0.07**
Natural Gas Compression - Operations[a]	8.67	8.67	48.19	0.10	96.38	48.19	33.73
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.01	0.01	0.16	0.00	0.13	0.01	0.00
Station Visits - Operations	8.29	1.24	0.04	0.00	0.42	0.03	0.003
Well Workover - Operations	5.01	0.75	0.05	0.00	0.03	0.02	0.002
Well & Pipeline visits for Inspection & Repair - Operations	11.53	1.73	0.05	0.01	0.59	0.04	0.004
Subtotal: Operations	**33.51**	**12.41**	**48.48**	**0.11**	**97.56**	**48.29**	**33.74**
Road Maintenance	2.86	0.28	0.06	0.004	0.03	0.03	0.003
Subtotal: Maintenance	**2.86**	**0.28**	**0.06**	**0.004**	**0.03**	**0.03**	**0.003**
Road Reclamation	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.06**	**0.04**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**59.12**	**16.61**	**59.42**	**0.47**	**99.96**	**49.00**	**33.82**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-15. Summary of Output - Alternative A
Total Annual Emissions from Oil Wells - Year 2001

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	3.36	0.50	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	12.78	12.78	427.94	57.40	106.75	13.08	1.31
Well Completion Flaring	8.05	1.25	0.23	0.05	0.60	0.14	0.01
Subtotal: Construction	**24.19**	**14.53**	**428.17**	**57.45**	**107.35**	**13.22**	**1.32**
Natural Gas Compression - Operations[a]	0.09	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.75	0.75	10.60	0.70	2.28	0.87	0.09
Station Visits - Operations	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Well Workover - Operations	17.58	2.63	0.08	0.01	0.89	0.06	0.01
Subtotal: Operations	**18.42**	**3.40**	**10.68**	**0.71**	**3.18**	**0.93**	**0.09**
Road Maintenance	20.99	2.83	9.89	1.21	2.25	0.51	0.05
Subtotal: Maintenance	**20.99**	**2.83**	**9.89**	**1.21**	**2.25**	**0.51**	**0.05**
Total Emissions	**63.59**	**20.75**	**448.74**	**59.37**	**112.78**	**14.65**	**1.47**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs* 0.1

Table J-16. Summary of Output - Alternative A
Total Annual Emissions from Oil Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction – Fugitive Dust	3.08	0.46	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	11.73	11.73	392.94	52.71	98.02	12.01	1.20
Well Completion Flaring	7.39	1.14	0.21	0.04	0.55	0.13	0.01
Subtotal: Construction	**22.21**	**13.34**	**393.16**	**52.75**	**98.57**	**12.14**	**1.21**
Natural Gas Compression – Operations[a]	0.08	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters – Operations[a]	0.69	0.69	9.74	0.64	2.10	0.80	0.08
Station Visits – Operations	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Well Workover – Operations	19.27	2.89	0.09	0.01	0.98	0.06	0.01
Subtotal: Operations	**20.04**	**3.59**	**9.82**	**0.65**	**3.08**	**0.86**	**0.09**
Road Maintenance	23.00	3.10	10.84	1.33	2.47	0.55	0.06
Subtotal: Maintenance	**23.00**	**3.10**	**10.84**	**1.33**	**2.47**	**0.55**	**0.06**
Total Emissions	**65.25**	**20.03**	**413.82**	**54.73**	**104.12**	**13.55**	**1.36**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-17. Summary of Output - Alternative A
Total Annual Emissions from Oil Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	3.08	0.46	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	11.73	11.73	392.94	52.71	98.02	12.01	1.20
Well Completion Flaring	7.39	1.14	0.21	0.04	0.55	0.13	0.01
Subtotal: Construction	**22.21**	**13.34**	**393.16**	**52.75**	**98.57**	**12.14**	**1.21**
Natural Gas Compression - Operations[a]	0.08	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.69	0.69	9.74	0.64	2.10	0.80	0.08
Station Visits - Operations	0.00	0.00	0.00	0.00	0.01	0.00	0.000
Well Workover - Operations	21.17	3.17	0.09	0.01	1.08	0.07	0.007
Subtotal: Operations	**21.94**	**3.88**	**9.83**	**0.65**	**3.18**	**0.87**	**0.09**
Road Maintenance	25.27	3.40	11.91	1.457	2.71	0.61	0.061
Subtotal: Maintenance	**25.27**	**3.40**	**11.91**	**1.457**	**2.71**	**0.61**	**0.061**
Total Emissions	**69.42**	**20.62**	**414.89**	**54.86**	**104.46**	**13.61**	**1.36**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-18. Summary of Output - Alternative B
Total Annual Emissions from Oil Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.97	0.97	32.65	4.38	8.14	1.00	0.10
Well Completion Flaring	0.61	0.10	0.02	0.00	0.05	0.01	0.00
Subtotal: Construction	**1.85**	**1.11**	**32.67**	**4.38**	**8.19**	**1.01**	**0.10**
Natural Gas Compression - Operations[a]	0.01	0.00	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.06	0.06	0.81	0.05	0.17	0.07	0.01
Station Visits - Operations	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Workover - Operations	17.55	2.63	0.08	0.01	0.89	0.06	0.01
Subtotal: Operations	**17.62**	**2.69**	**0.89**	**0.06**	**1.07**	**0.12**	**0.01**
Road Maintenance	20.96	2.82	9.87	1.21	2.25	0.50	0.05
Subtotal: Maintenance	**20.96**	**2.82**	**9.87**	**1.21**	**2.25**	**0.50**	**0.05**
Total Emissions	**40.42**	**6.62**	**43.43**	**5.65**	**11.50**	**1.64**	**0.16**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-19. Summary of Output - Alternative B
Total Annual Emissions from Oil Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.97	0.97	32.65	4.38	8.14	1.00	0.10
Well Completion Flaring	0.61	0.10	0.02	0.00	0.05	0.01	0.00
Subtotal: Construction	**1.85**	**1.11**	**32.67**	**4.38**	**8.19**	**1.01**	**0.10**
Natural Gas Compression - Operations[a]	0.01	0.00	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.06	0.06	0.81	0.05	0.17	0.07	0.01
Station Visits - Operations	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Well Workover - Operations	17.71	2.65	0.08	0.01	0.90	0.06	0.006
Subtotal: Operations	**17.78**	**2.71**	**0.89**	**0.06**	**1.08**	**0.12**	**0.01**
Road Maintenance	21.15	2.85	9.96	1.219	2.27	0.51	0.051
Subtotal: Maintenance	**21.15**	**2.85**	**9.96**	**1.219**	**2.27**	**0.51**	**0.051**
Total Emissions	**40.77**	**6.67**	**43.51**	**5.66**	**11.53**	**1.64**	**0.16**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-20. Summary of Output - Alternative C
Total Annual Emissions from Oil Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	2.79	0.42	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	10.63	10.63	355.90	47.74	88.78	10.88	1.09
Well Completion Flaring	6.69	1.04	0.19	0.04	0.50	0.12	0.01
Subtotal: Construction	**20.12**	**12.08**	**356.10**	**47.78**	**89.28**	**10.99**	**1.10**
Natural Gas Compression - Operations[a]	0.08	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.63	0.63	8.82	0.58	1.90	0.72	0.07
Station Visits - Operations	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Workover - Operations	19.11	2.86	0.08	0.01	0.97	0.06	0.01
Subtotal: Operations	**19.81**	**3.50**	**8.90**	**0.59**	**2.88**	**0.79**	**0.08**
Road Maintenance	22.81	3.07	10.75	1.32	2.45	0.55	0.05
Subtotal: Maintenance	**22.81**	**3.07**	**10.75**	**1.32**	**2.45**	**0.55**	**0.05**
Total Emissions	**62.74**	**18.65**	**375.75**	**49.69**	**94.60**	**12.33**	**1.23**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-21. Summary of Output - Alternative C
Total Annual Emissions from Oil Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	2.79	0.42	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	10.63	10.63	355.90	47.74	88.78	10.88	1.09
Well Completion Flaring	6.69	1.04	0.19	0.04	0.50	0.12	0.01
Subtotal: Construction	**20.12**	**12.08**	**356.10**	**47.78**	**89.28**	**10.99**	**1.10**
Natural Gas Compression - Operations[a]	0.08	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.63	0.63	8.82	0.58	1.90	0.72	0.07
Station Visits - Operations	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Well Workover - Operations	20.82	3.12	0.09	0.01	1.06	0.07	0.007
Subtotal: Operations	**21.52**	**3.76**	**8.91**	**0.59**	**2.96**	**0.79**	**0.08**
Road Maintenance	24.86	3.35	11.71	1.433	2.66	0.60	0.060
Subtotal: Maintenance	**24.86**	**3.35**	**11.71**	**1.433**	**2.66**	**0.60**	**0.060**
Total Emissions	**66.50**	**19.19**	**376.72**	**49.80**	**94.91**	**12.38**	**1.24**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-22. Summary of Output - Alternative D
Total Annual Emissions from Oil Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	3.03	0.45	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	11.52	11.52	385.65	51.73	96.21	11.78	1.18
Well Completion Flaring	7.25	1.12	0.21	0.04	0.54	0.13	0.01
Subtotal: Construction	**21.80**	**13.09**	**385.86**	**51.77**	**96.74**	**11.91**	**1.19**
Natural Gas Compression - Operations[a]	0.08	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.68	0.68	9.55	0.63	2.06	0.78	0.08
Station Visits - Operations	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Well Workover - Operations	19.23	2.88	0.08	0.01	0.98	0.06	0.01
Subtotal: Operations	**19.99**	**3.57**	**9.64**	**0.64**	**3.04**	**0.85**	**0.08**
Road Maintenance	22.96	3.09	10.82	1.32	2.46	0.55	0.06
Subtotal: Maintenance	**22.96**	**3.09**	**10.82**	**1.32**	**2.46**	**0.55**	**0.06**
Total Emissions	**64.76**	**19.76**	**406.32**	**53.74**	**102.25**	**13.31**	**1.33**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-23. Summary of Output - Alternative D
Total Annual Emissions from Oil Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	3.03	0.45	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	11.52	11.52	385.65	51.73	96.21	11.78	1.18
Well Completion Flaring	7.25	1.12	0.21	0.04	0.54	0.13	0.01
Subtotal: Construction	**21.80**	**13.09**	**385.86**	**51.77**	**96.74**	**11.91**	**1.19**
Natural Gas Compression - Operations[a]	0.08	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.68	0.68	9.55	0.63	2.06	0.78	0.08
Station Visits - Operations	0.00	0.00	0.00	0.00	0.01	0.00	0.000
Well Workover - Operations	21.10	3.16	0.09	0.01	1.07	0.07	0.007
Subtotal: Operations	**21.86**	**3.85**	**9.65**	**0.64**	**3.14**	**0.85**	**0.09**
Road Maintenance	25.19	3.39	11.87	1.453	2.70	0.61	0.061
Subtotal: Maintenance	**25.19**	**3.39**	**11.87**	**1.453**	**2.70**	**0.61**	**0.061**
Total Emissions	**68.85**	**20.34**	**407.38**	**53.87**	**102.58**	**13.37**	**1.34**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-24. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Oil Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	3.06	0.46	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	11.63	11.63	389.62	52.26	97.20	11.91	1.19
Well Completion Flaring	7.33	1.13	0.21	0.04	0.54	0.13	0.01
Subtotal: Construction	**22.02**	**13.23**	**389.83**	**52.30**	**97.74**	**12.03**	**1.20**
Natural Gas Compression - Operations[a]	0.08	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.69	0.69	9.65	0.64	2.08	0.79	0.08
Station Visits - Operations	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Well Workover - Operations	19.25	2.88	0.09	0.01	0.98	0.06	0.01
Subtotal: Operations	**20.02**	**3.58**	**9.74**	**0.65**	**3.06**	**0.86**	**0.09**
Road Maintenance	22.99	3.10	10.83	1.33	2.46	0.55	0.06
Subtotal: Maintenance	**22.99**	**3.10**	**10.83**	**1.33**	**2.46**	**0.55**	**0.06**
Total Emissions	**65.03**	**19.90**	**410.40**	**54.28**	**103.27**	**13.44**	**1.34**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-25. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Oil Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	3.06	0.46	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	11.63	11.63	389.62	52.26	97.20	11.91	1.19
Well Completion Flaring	7.33	1.13	0.21	0.04	0.54	0.13	0.01
Subtotal: Construction	**22.02**	**13.23**	**389.83**	**52.30**	**97.74**	**12.03**	**1.20**
Natural Gas Compression - Operations[a]	0.08	0.01	---	---	---	---	---
Separator, Dehydrator & Water Tank Heaters - Operations[a]	0.69	0.69	9.65	0.64	2.08	0.79	0.08
Station Visits - Operations	0.00	0.00	0.00	0.00	0.01	0.00	0.000
Well Workover - Operations	21.14	3.17	0.09	0.01	1.08	0.07	0.007
Subtotal: Operations	**21.90**	**3.86**	**9.75**	**0.65**	**3.16**	**0.86**	**0.09**
Road Maintenance	25.23	3.40	11.89	1.455	2.70	0.61	0.061
Subtotal: Maintenance	**25.23**	**3.40**	**11.89**	**1.455**	**2.70**	**0.61**	**0.061**
Total Emissions	**69.16**	**20.49**	**411.47**	**54.41**	**103.60**	**13.50**	**1.35**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1

Table J-26. Summary of Output -Alternative A
Total Annual Emissions from Natural Gas Wells - Year 2001

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	10.72	1.61	---	---	---	---	---
Heavy Equipment Combustive Emissions [a]	10.49	10.49	217.88	4.69	70.48	17.77	1.78
Well Completion Flaring	0.10	0.10	0.94	0.01	5.14	25.33	2.53
Commuting Vehicles - Construction	25.01	4.23	2.74	0.54	7.06	1.65	0.16
Subtotal: Construction	**46.32**	**16.42**	**221.56**	**5.23**	**82.67**	**44.75**	**4.47**
Natural Gas Compression - Operations [a]	7.82	7.82	118.37	0.24	236.75	118.37	18.94
Separator, Dehydrator & Water Tank Heaters - Operations [a]	6.57	6.57	86.40	0.52	72.58	2,219.92	221.99
Station Visits - Operations	7.52	1.13	0.03	0.00	0.38	0.02	0.00
Well Workover - Operations	0.26	0.10	2.33	0.01	0.47	0.09	0.01
Well & Pipeline visits for Inspection & Repair - Operations	13.38	2.01	0.06	0.01	0.68	0.04	0.00
Tanks Condensate and Loadout	---	---	---	---	---	215.77	21.58
Subtotal: Operations	**35.55**	**17.61**	**207.20**	**0.78**	**310.86**	**2,554.22**	**262.52**
Road Maintenance	3.41	0.42	1.92	0.04	0.64	0.16	0.02
Subtotal: Maintenance	**3.41**	**0.42**	**1.92**	**0.04**	**0.64**	**0.16**	**0.02**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**85.30**	**34.46**	**430.68**	**6.05**	**394.17**	**2,599.13**	**267.02**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-27. Summary of Output - Alternative A
Total Annual Emissions from Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	9.89	1.48	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	5.08	5.08	144.06	4.33	21.76	6.46	0.65
Well Completion Flaring	0.10	0.10	0.90	0.01	4.92	23.39	2.34
Commuting Vehicles - Construction	23.10	3.90	2.53	0.50	6.52	1.52	0.15
Subtotal: Construction	**38.17**	**10.57**	**147.50**	**4.83**	**33.20**	**31.37**	**3.14**
Natural Gas Compression - Operations[a]	10.74	10.74	162.69	0.33	325.38	162.69	26.03
Separator, Dehydrator & Water Tank Heaters - Operations[a]	9.03	9.03	118.78	0.71	99.77	3,163.94	316.39
Station Visits - Operations	10.34	1.55	0.05	0.01	0.53	0.03	0.00
Well Workover - Operations	0.24	0.09	2.15	0.01	0.43	0.09	0.01
Well & Pipeline visits for Inspection & Repair - Operations	18.40	2.76	0.08	0.01	0.94	0.06	0.01
Tanks Condensate and Loadout	---	---	---	---	---	307.55	30.75
Subtotal: Operations	**48.75**	**24.17**	**283.75**	**1.06**	**427.05**	**3,634.36**	**373.20**
Road Maintenance	4.62	0.50	1.29	0.01	0.30	0.11	0.01
Subtotal: Maintenance	**4.62**	**0.50**	**1.29**	**0.01**	**0.30**	**0.11**	**0.01**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**91.56**	**35.24**	**432.54**	**5.90**	**460.55**	**3,665.84**	**376.35**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-28. Summary of Output - Alternative A
Total Annual Emissions from Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	9.89	1.48	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	5.08	5.08	144.06	4.33	21.76	6.46	0.65
Well Completion Flaring	0.10	0.10	0.90	0.01	4.92	23.39	2.34
Commuting Vehicles - Construction	23.10	3.90	2.53	0.50	6.52	1.52	0.15
Subtotal: Construction	**38.17**	**10.57**	**147.50**	**4.83**	**33.20**	**31.37**	**3.14**
Natural Gas Compression - Operations[a]	14.03	14.03	212.54	0.43	425.08	212.54	34.01
Separator, Dehydrator & Water Tank Heaters - Operations[a]	11.78	11.78	155.04	0.93	130.24	3635.67	363.57
Station Visits - Operations	13.50	2.02	0.06	0.01	0.69	0.04	0.004
Well Workover - Operations	0.18	0.03	0.14	0.01	0.05	0.07	0.007
Well & Pipeline visits for Inspection & Repair - Operations	24.03	3.60	0.11	0.01	1.22	0.08	0.008
Tanks Condensate and Loadout	---	---	---	---	---	353.30	35.33
Subtotal: Operations	**63.54**	**31.47**	**367.89**	**1.38**	**557.28**	**4201.71**	**432.92**
Road Maintenance	5.97	0.59	0.12	0.009	0.07	0.06	0.006
Subtotal: Maintenance	**5.97**	**0.59**	**0.12**	**0.009**	**0.07**	**0.06**	**0.006**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.01**	**0.00**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**107.70**	**42.63**	**515.51**	**6.23**	**590.55**	**4,233.14**	**436.07**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-29. Summary of Output - Alternative B
Total Annual Emissions from Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	0.68	0.10	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.40	0.40	11.21	0.34	1.70	0.50	0.05
Well Completion Flaring	0.00	0.00	0.01	0.00	0.07	1.81	0.18
Commuting Vehicles - Construction	1.81	0.31	0.20	0.04	0.51	0.12	0.01
Subtotal: Construction	**2.89**	**0.81**	**11.42**	**0.38**	**2.28**	**2.44**	**0.24**
Natural Gas Compression - Operations[a]	7.75	7.75	117.40	0.23	234.80	117.40	18.78
Separator, Dehydrator & Water Tank Heaters - Operations[a]	6.48	6.48	85.23	0.51	71.59	423.65	42.37
Station Visits - Operations	7.46	1.12	0.03	0.00	0.38	0.02	0.00
Well Workover - Operations	0.02	0.01	0.17	0.00	0.03	0.01	0.00
Well & Pipeline visits for Inspection & Repair - Operations	13.27	1.99	0.06	0.01	0.68	0.04	0.00
Tanks Condensate and Loadout	---	---	---	---	---	40.81	4.08
Subtotal: Operations	**34.98**	**17.34**	**202.89**	**0.76**	**307.48**	**581.94**	**65.24**
Road Maintenance	3.34	0.36	0.93	0.00	0.22	0.08	0.01
Subtotal: Maintenance	**3.34**	**0.36**	**0.93**	**0.00**	**0.22**	**0.08**	**0.01**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**41.22**	**18.51**	**215.24**	**1.14**	**309.98**	**584.45**	**65.49**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-30. Summary of Output - Alternative B
Total Annual Emissions from Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	0.68	0.10	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	0.40	0.40	11.21	0.34	1.70	0.50	0.05
Well Completion Flaring	0.00	0.00	0.01	0.00	0.07	1.81	0.18
Commuting Vehicles - Construction	1.81	0.31	0.20	0.04	0.51	0.12	0.01
Subtotal: Construction	**2.89**	**0.81**	**11.42**	**0.38**	**2.28**	**2.44**	**0.24**
Natural Gas Compression - Operations[a]	8.01	8.01	121.26	0.24	242.52	121.26	19.40
Separator, Dehydrator & Water Tank Heaters - Operations[a]	6.69	6.69	88.02	0.53	73.94	381.47	38.15
Station Visits - Operations	7.70	1.15	0.03	0.00	0.39	0.03	0.003
Well Workover - Operations	0.01	0.00	0.01	0.00	0.00	0.01	0.001
Well & Pipeline visits for Inspection & Repair - Operations	13.71	2.05	0.06	0.01	0.70	0.04	0.004
Tanks Condensate and Loadout	---	---	---	---	---	36.69	3.67
Subtotal: Operations	**36.13**	**17.91**	**209.39**	**0.78**	**317.55**	**539.50**	**61.23**
Road Maintenance	3.41	0.33	0.07	0.005	0.04	0.03	0.003
Subtotal: Maintenance	**3.41**	**0.33**	**0.07**	**0.005**	**0.04**	**0.03**	**0.003**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.01**	**0.00**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**42.43**	**19.05**	**220.88**	**1.16**	**319.88**	**541.96**	**61.47**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-31. Summary of Output - Alternative C
Total Annual Emissions from Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction – Fugitive Dust	8.95	1.34	---	---	---	---	---
Heavy Equipment Combustive Emissions [a]	4.60	4.60	130.41	3.92	19.70	5.85	0.58
Well Completion Flaring	0.09	0.09	0.78	0.01	4.23	21.17	2.12
Commuting Vehicles – Construction	20.91	3.53	2.29	0.45	5.90	1.38	0.14
Subtotal: Construction	**34.54**	**9.56**	**133.47**	**4.37**	**29.83**	**28.40**	**2.84**
Natural Gas Compression – Operations [a]	10.45	10.45	158.31	0.32	316.63	158.31	25.33
Separator, Dehydrator & Water Tank Heaters – Operations [a]	8.78	8.78	115.54	0.69	97.06	2,926.65	292.67
Station Visits – Operations	10.06	1.51	0.04	0.00	0.51	0.03	0.00
Well Workover – Operations	0.22	0.08	1.95	0.01	0.39	0.08	0.01
Well & Pipeline visits for Inspection & Repair – Operations	17.90	2.68	0.08	0.01	0.91	0.06	0.01
Tanks Condensate and Loadout	---	---	---	---	---	284.45	28.45
Subtotal: Operations	**47.41**	**23.51**	**275.93**	**1.03**	**415.50**	**3,369.59**	**346.46**
Road Maintenance	4.50	0.49	1.25	0.01	0.29	0.11	0.01
Subtotal: Maintenance	**4.50**	**0.49**	**1.25**	**0.01**	**0.29**	**0.11**	**0.01**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**86.47**	**33.56**	**410.66**	**5.41**	**445.62**	**3,398.09**	**349.31**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-32. Summary of Output - Alternative C
Total Annual Emissions from Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	8.95	1.34	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	4.60	4.60	130.41	3.92	19.70	5.85	0.58
Well Completion Flaring	0.09	0.09	0.78	0.01	4.23	21.17	2.12
Commuting Vehicles - Construction	20.91	3.53	2.29	0.45	5.90	1.38	0.14
Subtotal: Construction	**34.54**	**9.56**	**133.47**	**4.37**	**29.83**	**28.40**	**2.84**
Natural Gas Compression - Operations[a]	13.43	13.43	203.43	0.41	406.87	203.43	32.55
Separator, Dehydrator & Water Tank Heaters - Operations[a]	11.28	11.28	148.36	0.89	124.63	3330.25	333.03
Station Visits - Operations	12.93	1.94	0.06	0.01	0.66	0.04	0.004
Well Workover - Operations	0.17	0.03	0.13	0.01	0.05	0.06	0.006
Well & Pipeline visits for Inspection & Repair - Operations	23.00	3.45	0.10	0.01	1.17	0.08	0.008
Tanks Condensate and Loadout	---	---	---	---	---	323.59	32.36
Subtotal: Operations	**60.80**	**30.12**	**352.08**	**1.32**	**533.37**	**3857.45**	**397.95**
Road Maintenance	5.71	0.56	0.11	0.008	0.07	0.05	0.005
Subtotal: Maintenance	**5.71**	**0.56**	**0.11**	**0.008**	**0.07**	**0.05**	**0.005**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.01**	**0.00**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**101.07**	**40.24**	**485.67**	**5.71**	**563.27**	**3,885.90**	**400.80**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-33. Summary of Output - Alternative D
Total Annual Emissions from Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction – Fugitive Dust	9.70	1.46	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	4.98	4.98	141.35	4.25	21.35	6.34	0.63
Well Completion Flaring	0.10	0.10	0.88	0.01	4.78	22.95	2.30
Commuting Vehicles – Construction	22.67	3.83	2.48	0.49	6.40	1.49	0.15
Subtotal: Construction	**37.45**	**10.37**	**144.71**	**4.74**	**32.52**	**30.78**	**3.08**
Natural Gas Compression – Operations[a]	10.69	10.69	161.85	0.32	323.71	161.85	25.90
Separator, Dehydrator & Water Tank Heaters – Operations[a]	8.98	8.98	118.16	0.71	99.25	3,116.06	311.61
Station Visits – Operations	10.28	1.54	0.05	0.01	0.52	0.03	0.00
Well Workover – Operations	0.24	0.09	2.11	0.01	0.42	0.08	0.01
Well & Pipeline visits for Inspection & Repair – Operations	18.30	2.74	0.08	0.01	0.93	0.06	0.01
Tanks Condensate and Loadout	---	---	---	---	---	302.89	30.29
Subtotal: Operations	**48.49**	**24.04**	**282.25**	**1.06**	**424.84**	**3,580.99**	**367.81**
Road Maintenance	4.60	0.50	1.28	0.01	0.30	0.11	0.01
Subtotal: Maintenance	**4.60**	**0.50**	**1.28**	**0.01**	**0.30**	**0.11**	**0.01**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**90.56**	**34.91**	**428.25**	**5.80**	**457.67**	**3,611.88**	**370.90**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-34. Summary of Output - Alternative D
Total Annual Emissions from Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	9.70	1.46	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	4.98	4.98	141.35	4.25	21.35	6.34	0.63
Well Completion Flaring	0.10	0.10	0.88	0.01	4.78	22.95	2.30
Commuting Vehicles - Construction	22.67	3.83	2.48	0.49	6.40	1.49	0.15
Subtotal: Construction	**37.45**	**10.37**	**144.71**	**4.74**	**32.52**	**30.78**	**3.08**
Natural Gas Compression - Operations[a]	13.92	13.92	210.76	0.42	421.53	210.76	33.72
Separator, Dehydrator & Water Tank Heaters - Operations[a]	11.68	11.68	153.74	0.92	129.15	3589.56	358.96
Station Visits - Operations	13.39	2.01	0.06	0.01	0.68	0.04	0.004
Well Workover - Operations	0.18	0.03	0.14	0.01	0.05	0.07	0.007
Well & Pipeline visits for Inspection & Repair - Operations	23.83	3.57	0.11	0.01	1.21	0.08	0.008
Tanks Condensate and Loadout	---	---	---	---	---	348.82	34.88
Subtotal: Operations	**63.00**	**31.21**	**364.81**	**1.37**	**552.62**	**4149.33**	**427.58**
Road Maintenance	5.92	0.58	0.12	0.008	0.07	0.06	0.006
Subtotal: Maintenance	**5.92**	**0.58**	**0.12**	**0.008**	**0.07**	**0.06**	**0.006**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.01**	**0.00**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**106.39**	**42.16**	**509.64**	**6.12**	**585.21**	**4,180.16**	**430.66**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-35. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Natural Gas Wells - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction – Fugitive Dust	9.80	1.47	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	5.03	5.03	142.71	4.29	21.55	6.40	0.64
Well Completion Flaring	0.10	0.10	0.90	0.01	4.89	23.17	2.32
Commuting Vehicles – Construction	22.89	3.87	2.50	0.49	6.46	1.51	0.15
Subtotal: Construction	**37.81**	**10.47**	**146.11**	**4.79**	**32.90**	**31.08**	**3.11**
Natural Gas Compression – Operations[a]	10.72	10.72	162.27	0.32	324.54	162.27	25.96
Separator, Dehydrator & Water Tank Heaters – Operations[a]	9.00	9.00	118.47	0.71	99.52	3,163.93	316.39
Station Visits – Operations	10.31	1.54	0.05	0.01	0.52	0.03	0.00
Well Workover – Operations	0.24	0.09	2.13	0.01	0.43	0.09	0.01
Well & Pipeline visits for Inspection & Repair – Operations	18.35	2.75	0.08	0.01	0.93	0.06	0.01
Tanks Condensate and Loadout	---	---	---	---	---	307.55	30.75
Subtotal: Operations	**48.62**	**24.10**	**283.00**	**1.06**	**425.95**	**3,633.93**	**373.13**
Road Maintenance	4.61	0.50	1.29	0.01	0.30	0.11	0.01
Subtotal: Maintenance	**4.61**	**0.50**	**1.29**	**0.01**	**0.30**	**0.11**	**0.01**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions	**91.06**	**35.07**	**430.41**	**5.85**	**459.15**	**3,665.11**	**376.25**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-36. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Natural Gas Wells - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Well Pad & Station Construction - Fugitive Dust	9.80	1.47	---	---	---	---	---
Heavy Equipment Combustive Emissions[a]	5.03	5.03	142.71	4.29	21.55	6.40	0.64
Well Completion Flaring	0.10	0.10	0.90	0.01	4.89	23.17	2.32
Commuting Vehicles - Construction	22.89	3.87	2.50	0.49	6.46	1.51	0.15
Subtotal: Construction	**37.81**	**10.47**	**146.11**	**4.79**	**32.90**	**31.08**	**3.11**
Natural Gas Compression - Operations[a]	13.98	13.98	211.65	0.42	423.30	211.65	33.86
Separator, Dehydrator & Water Tank Heaters - Operations[a]	11.73	11.73	154.39	0.93	129.69	3605.54	360.55
Station Visits - Operations	13.45	2.01	0.06	0.01	0.68	0.04	0.004
Well Workover - Operations	0.18	0.03	0.14	0.01	0.05	0.07	0.007
Well & Pipeline visits for Inspection & Repair - Operations	23.93	3.59	0.11	0.01	1.22	0.08	0.008
Tanks Condensate and Loadout	---	---	---	---	---	350.37	35.04
Subtotal: Operations	**63.27**	**31.34**	**366.35**	**1.38**	**554.95**	**4167.75**	**429.47**
Road Maintenance	5.95	0.58	0.12	0.009	0.07	0.06	0.006
Subtotal: Maintenance	**5.95**	**0.58**	**0.12**	**0.009**	**0.07**	**0.06**	**0.006**
Road Reclamation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Well Reclamation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Reclamation	**0.01**	**0.00**	**0.00**	**0.0000**	**0.00**	**0.000**	**0.0000**
Total Emissions	**107.05**	**42.40**	**512.58**	**6.17**	**587.92**	**4,198.89**	**432.59**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants, assumed = VOCs*0.1, and formaldehyde HAP added for gas compression

Table J-37. Summary of Output - Alternative A
Total Annual Emissions from Coal Mining Operations - Year 2002

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Coal1	10.55	2.47	61.11	1.05	---	---	---
Coal2	0.33	0.08	1.89	0.03	---	---	---
Dump1	7.46	1.75	---	---	---	---	---
Dump2	0.23	0.05	---	---	---	---	---
Overburden	1.54	0.36	148.08	0.35	---	---	---
OB Proc	293.44	68.73	35.99	3.56	---	---	---
Train Loop	3.45	0.81	126.11	9.00	---	---	---
Wind Erosion	162.83	38.14	0.00	0.00	---	---	---
Total Emissions	**479.82**	**112.39**	**373.18**	**13.99**	**0.00**	**0.00**	**0.00**

Source: MacDonald #AQ014

[a] $PM_{2.5}$ PM_{10} * 0.234 for this source.

[b] HAPs Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: Coal mine emissions in year 2002 come from #AQ14, and are emissions for Antelope Coal Mine, increased by a factor of 1.095 in 2011 & 1.254 in 2020.

Table J-38. Summary of Output - Alternative A
Total Annual Emissions from Coal Mining Operations - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Coal1	11.55	2.68	66.91	1.14	---	---	---
Coal2	0.36	0.08	2.07	0.04	---	---	---
Dump1	8.17	1.90	---	---	---	---	---
Dump2	0.25	0.06	---	---	---	---	---
Overburden	1.68	0.39	162.14	0.38	---	---	---
OB Proc	321.32	74.55	39.41	3.90	---	---	---
Train Loop	3.78	0.88	138.09	9.86	---	---	---
Wind Erosion	178.29	41.36	0.00	0.00	---	---	---
Total Emissions	**525.40**	**121.89**	**408.63**	**15.32**	**0.00**	**0.00**	**0.00**

Source: MacDonald #AQ014

[a] $PM_{2.5}$ = PM_{10} * 0.232 for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-39. Summary of Output - Alternative A
Total Annual Emissions from Coal Mining Operations - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Coal1	13.23	3.07	76.63	1.31	---	---	---
Coal2	0.41	0.09	2.37	0.04	---	---	---
Dump1	9.35	2.17	---	---	---	---	---
Dump2	0.29	0.07	---	---	---	---	---
Overburden	1.93	0.45	185.69	0.44	---	---	---
OB Proc	367.98	85.37	45.13	4.47	---	---	---
Train Loop	4.33	1.00	158.14	11.29	---	---	---
Wind Erosion	204.18	47.37	0.00	0.00	---	---	---
Total Emissions	**601.69**	**139.59**	**467.97**	**17.55**	**0.00**	**0.00**	**0.00**

Source: MacDonald #AQ014

[a] $PM_{2.5}$ = PM_{10} * 0.232 for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-40. Summary of Output - Alternative A
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2001

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	172.41	18.97	6.83	---	---	---	---
Unpaved Roads	99.99	14.95	---	---	---	---	---
Commuting Vehicles - Exhaust	0.28	0.25	1.34	0.24	5.96	0.85	0.08
Batch Drop Operations	0.63	0.20	---	---	---	---	---
Heavy Equipment - Dust	21.45	3.22	---	---	---	---	---
Heavy Equipment - Combustive	0.50	0.50	10.40	0.22	3.35	0.84	0.08
Total	**295.25**	**38.08**	**18.57**	**0.46**	**9.31**	**1.69**	**0.17**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-41. Summary of Output - Alternative A
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	172.41	18.97	6.83	---	---	---	---
Unpaved Roads	99.99	14.95	---	---	---	---	---
Commuting Vehicles - Exhaust	0.28	0.25	1.34	0.24	5.96	0.85	0.08
Batch Drop Operations	0.63	0.20	---	---	---	---	---
Heavy Equipment - Dust	21.45	3.22	---	---	---	---	---
Heavy Equipment - Combustive	0.16	0.16	5.00	0.02	1.15	0.33	0.03
Total	**294.92**	**37.74**	**13.17**	**0.26**	**7.10**	**1.18**	**0.12**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-42. Summary of Output – Alternative A
Annual Emissions Estimation for Salable Minerals Equipment Usage – Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	172.41	18.97	6.83	---	---	---	---
Unpaved Roads	99.99	14.95	---	---	---	---	---
Commuting Vehicles – Exhaust	0.28	0.25	1.34	0.24	5.96	0.85	0.08
Batch Drop Operations	0.63	0.20	---	---	---	---	---
Heavy Equipment – Dust	21.45	3.22	---	---	---	---	---
Heavy Equipment – Combustive	0.01	0.01	0.35	0.02	0.12	0.16	0.02
Total	**294.77**	**37.59**	**8.52**	**0.26**	**6.08**	**1.01**	**0.10**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-43. Summary of Output - Alternative B
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	166.11	18.27	6.58	---	---	---	---
Unpaved Roads	96.34	14.41	---	---	---	---	---
Commuting Vehicles - Exhaust	0.27	0.24	1.29	0.23	5.74	0.81	0.08
Batch Drop Operations	0.60	0.19	---	---	---	---	---
Heavy Equipment - Dust	20.67	3.10	---	---	---	---	---
Heavy Equipment - Combustive	0.16	0.16	4.82	0.02	1.10	0.32	0.03
Total	**284.14**	**36.36**	**12.69**	**0.25**	**6.84**	**1.14**	**0.11**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-44. Summary of Output - Alternative B
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	166.11	18.27	6.58	---	---	---	---
Unpaved Roads	96.34	14.41	---	---	---	---	---
Commuting Vehicles - Exhaust	0.27	0.24	1.29	0.23	5.74	0.81	0.08
Batch Drop Operations	0.60	0.19	---	---	---	---	---
Heavy Equipment - Dust	20.67	3.10	---	---	---	---	---
Heavy Equipment - Combustive	0.01	0.01	0.33	0.02	0.11	0.16	0.02
Total	**284.00**	**36.22**	**8.21**	**0.25**	**5.85**	**0.97**	**0.10**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-45. Summary of Output - Alternative C
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	209.39	23.03	8.30	---	---	---	---
Unpaved Roads	121.44	18.16	---	---	---	---	---
Commuting Vehicles - Exhaust	0.33	0.30	1.63	0.29	7.24	1.03	0.10
Batch Drop Operations	0.76	0.24	---	---	---	---	---
Heavy Equipment - Dust	25.74	3.86	---	---	---	---	---
Heavy Equipment - Combustive	0.20	0.20	6.07	0.03	1.39	0.40	0.04
Total	**357.87**	**45.79**	**16.00**	**0.32**	**8.63**	**1.43**	**0.14**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-46. Summary of Output - Alternative C
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	209.39	23.03	8.30	---	---	---	---
Unpaved Roads	121.44	18.16	---	---	---	---	---
Commuting Vehicles - Exhaust	0.33	0.30	1.63	0.29	7.24	1.03	0.10
Batch Drop Operations	0.76	0.24	---	---	---	---	---
Heavy Equipment - Dust	25.74	3.86	---	---	---	---	---
Heavy Equipment - Combustive	0.02	0.02	0.42	0.03	0.14	0.20	0.02
Total	**357.69**	**45.61**	**10.35**	**0.32**	**7.38**	**1.22**	**0.12**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-47. Summary of Output - Alternative D
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	292.30	32.15	11.58	---	---	---	---
Unpaved Roads	169.53	25.35	---	---	---	---	---
Commuting Vehicles - Exhaust	0.47	0.42	2.27	0.40	10.10	1.43	0.14
Batch Drop Operations	1.06	0.33	---	---	---	---	---
Heavy Equipment - Dust	36.27	5.44	---	---	---	---	---
Heavy Equipment - Combustive	0.27	0.27	8.48	0.04	1.94	0.56	0.06
Total	**499.90**	**63.98**	**22.33**	**0.45**	**12.04**	**2.00**	**0.20**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-48. Summary of Output - Alternative D
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	292.30	32.15	11.58	---	---	---	---
Unpaved Roads	169.53	25.35	---	---	---	---	---
Commuting Vehicles - Exhaust	0.47	0.42	2.27	0.40	10.10	1.43	0.14
Batch Drop Operations	1.06	0.33	---	---	---	---	---
Heavy Equipment - Dust	36.27	5.44	---	---	---	---	---
Heavy Equipment - Combustive	0.02	0.02	0.59	0.04	0.20	0.27	0.03
Total	**499.65**	**63.72**	**14.44**	**0.45**	**10.30**	**1.71**	**0.17**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-49. Summary of Output - Alternative E (Preferred Alternative)
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	215.70	23.73	8.55	---	---	---	---
Unpaved Roads	125.10	18.71	---	---	---	---	---
Commuting Vehicles - Exhaust	0.34	0.31	1.68	0.30	7.45	1.06	0.11
Batch Drop Operations	0.78	0.25	---	---	---	---	---
Heavy Equipment - Dust	26.52	3.98	---	---	---	---	---
Heavy Equipment - Combustive	0.20	0.20	6.26	0.03	1.43	0.42	0.04
Total	**368.65**	**47.17**	**16.48**	**0.33**	**8.89**	**1.47**	**0.15**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-50. Summary of Output - Alternative E (Preferred Alternative)
Annual Emissions Estimation for Salable Minerals Equipment Usage - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$[a]	NO_x	SO_2	CO	VOC	HAPs[b]
Sand Handling, Transfer, and Storage	215.70	23.73	8.55	---	---	---	---
Unpaved Roads	125.10	18.71	---	---	---	---	---
Commuting Vehicles - Exhaust	0.34	0.31	1.68	0.30	7.45	1.06	0.11
Batch Drop Operations	0.78	0.25	---	---	---	---	---
Heavy Equipment - Dust	26.52	3.98	---	---	---	---	---
Heavy Equipment - Combustive	0.02	0.02	0.43	0.03	0.15	0.20	0.02
Total	**368.47**	**46.99**	**10.66**	**0.33**	**7.60**	**1.26**	**0.13**

[a] Emission factor for $PM_{2.5}$ = PM_{10} for combustive emissions.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-51. Summary of Output - Alternative A
Total Annual Emissions from Renewable Energy Development - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	75.98	11.40	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.05	0.05	1.43	0.01	0.32	0.07	0.01
Subtotal: Heavy Equipment	**76.03**	**11.44**	**1.43**	**0.01**	**0.32**	**0.07**	**0.01**
Commuting Vehicles - Fugitive Dust	12.45	1.86	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.07	0.06	0.29	0.06	0.86	0.17	0.02
Subtotal: Commuting Vehicles	**12.51**	**1.92**	**0.29**	**0.06**	**0.86**	**0.17**	**0.02**
Total	**88.54**	**13.37**	**1.72**	**0.06**	**1.18**	**0.24**	**0.02**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-52. Summary of Output - Alternative A
Total Annual Emissions from Renewable Energy Development - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	---	---	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	---	---	---	---	---	---	---
Subtotal: Heavy Equipment	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	---	---	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	---	---	---	---	---	---	---
Subtotal: Commuting Vehicles	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-53. Summary of Output - Alternative B
Total Annual Emissions from Renewable Energy Development - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	0.00	0.00	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.00	0.00	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Commuting Vehicles	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-54. Summary of Output - Alternative B
Total Annual Emissions from Renewable Energy Development - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	---	---	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	---	---	---	---	---	---	---
Subtotal: Heavy Equipment	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	---	---	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	---	---	---	---	---	---	---
Subtotal: Commuting Vehicles	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-55. Summary of Output - Alternative C
Total Annual Emissions from Renewable Energy Development - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	75.98	11.40	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.05	0.05	1.43	0.01	0.32	0.07	0.01
Subtotal: Heavy Equipment	**76.03**	**11.44**	**1.43**	**0.01**	**0.32**	**0.07**	**0.01**
Commuting Vehicles - Fugitive Dust	12.45	1.86	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.07	0.06	0.29	0.06	0.86	0.17	0.02
Subtotal: Commuting Vehicles	**12.51**	**1.92**	**0.29**	**0.06**	**0.86**	**0.17**	**0.02**
Total	**88.54**	**13.37**	**1.72**	**0.06**	**1.18**	**0.24**	**0.02**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-56. Summary of Output - Alternative C
Total Annual Emissions from Renewable Energy Development - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	---	---	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	---	---	---	---	---	---	---
Subtotal: Heavy Equipment	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	---	---	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	---	---	---	---	---	---	---
Subtotal: Commuting Vehicles	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-57. Summary of Output - Alternative D
Total Annual Emissions from Renewable Energy Development - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	75.98	11.40	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.05	0.05	1.43	0.01	0.32	0.07	0.01
Subtotal: Heavy Equipment	**76.03**	**11.44**	**1.43**	**0.01**	**0.32**	**0.07**	**0.01**
Commuting Vehicles - Fugitive Dust	12.45	1.86	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.07	0.06	0.29	0.06	0.86	0.17	0.02
Subtotal: Commuting Vehicles	**12.51**	**1.92**	**0.29**	**0.06**	**0.86**	**0.17**	**0.02**
Total	**88.54**	**13.37**	**1.72**	**0.06**	**1.18**	**0.24**	**0.02**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-58. Summary of Output - Alternative D
Total Annual Emissions from Renewable Energy Development - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	---	---	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	---	---	---	---	---	---	---
Subtotal: Heavy Equipment	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	---	---	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	---	---	---	---	---	---	---
Subtotal: Commuting Vehicles	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-59. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Renewable Energy Development - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	75.98	11.40	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.05	0.05	1.43	0.01	0.32	0.07	0.01
Subtotal: Heavy Equipment	**76.03**	**11.44**	**1.43**	**0.01**	**0.32**	**0.07**	**0.01**
Commuting Vehicles - Fugitive Dust	12.45	1.86	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.07	0.06	0.29	0.06	0.86	0.17	0.02
Subtotal: Commuting Vehicles	**12.51**	**1.92**	**0.29**	**0.06**	**0.86**	**0.17**	**0.02**
Total	**88.54**	**13.37**	**1.72**	**0.06**	**1.18**	**0.24**	**0.02**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-60. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Renewable Energy Development - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	---	---	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	---	---	---	---	---	---	---
Subtotal: Heavy Equipment	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	---	---	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	---	---	---	---	---	---	---
Subtotal: Commuting Vehicles	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Note: The one activity is assigned to Year 2011 for analysis purposes.

Table J-61. Summary of Output - Alternative A
Total Annual Emissions from Livestock Grazing Projects - Year 2001

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.06	0.06	1.12	0.02	0.37	0.09	0.01
Subtotal: Heavy Equipment	**9.75**	**1.51**	**1.12**	**0.02**	**0.37**	**0.09**	**0.01**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.44**	**1.77**	**1.19**	**0.04**	**0.56**	**0.13**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-62. Summary of Output - Alternative A
Total Annual Emissions from Livestock Grazing Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.56	0.00	0.15	0.03	0.00
Subtotal: Heavy Equipment	**9.71**	**1.47**	**0.56**	**0.00**	**0.15**	**0.03**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.40**	**1.74**	**0.62**	**0.02**	**0.34**	**0.07**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

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Table J-63. Summary of Output - Alternative A
Total Annual Emissions from Livestock Grazing Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.04	0.00	0.01	0.02	0.00
Subtotal: Heavy Equipment	**9.70**	**1.46**	**0.04**	**0.00**	**0.01**	**0.02**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.39**	**1.72**	**0.10**	**0.02**	**0.21**	**0.06**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-64. Summary of Output - Alternative B
Total Annual Emissions from Livestock Grazing Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.56	0.00	0.15	0.03	0.00
Subtotal: Heavy Equipment	**9.71**	**1.47**	**0.56**	**0.00**	**0.15**	**0.03**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.40**	**1.74**	**0.62**	**0.02**	**0.34**	**0.07**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-65. Summary of Output - Alternative B
Total Annual Emissions from Livestock Grazing Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.04	0.00	0.01	0.02	0.00
Subtotal: Heavy Equipment	**9.70**	**1.46**	**0.04**	**0.00**	**0.01**	**0.02**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.39**	**1.72**	**0.10**	**0.02**	**0.21**	**0.06**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-66. Summary of Output - Alternative C
Total Annual Emissions from Livestock Grazing Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.56	0.00	0.15	0.03	0.00
Subtotal: Heavy Equipment	**9.71**	**1.47**	**0.56**	**0.00**	**0.15**	**0.03**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.40**	**1.74**	**0.62**	**0.02**	**0.34**	**0.07**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-67. Summary of Output - Alternative C
Total Annual Emissions from Livestock Grazing Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.04	0.00	0.01	0.02	0.00
Subtotal: Heavy Equipment	**9.70**	**1.46**	**0.04**	**0.00**	**0.01**	**0.02**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.39**	**1.72**	**0.10**	**0.02**	**0.21**	**0.06**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-68. Summary of Output - Alternative D
Total Annual Emissions from Livestock Grazing Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.56	0.00	0.15	0.03	0.00
Subtotal: Heavy Equipment	**9.71**	**1.47**	**0.56**	**0.00**	**0.15**	**0.03**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.40**	**1.74**	**0.62**	**0.02**	**0.34**	**0.07**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-69. Summary of Output - Alternative D
Total Annual Emissions from Livestock Grazing Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.04	0.00	0.01	0.02	0.00
Subtotal: Heavy Equipment	**9.70**	**1.46**	**0.04**	**0.00**	**0.01**	**0.02**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.39**	**1.72**	**0.10**	**0.02**	**0.21**	**0.06**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-70. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Livestock Grazing Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.56	0.00	0.15	0.03	0.00
Subtotal: Heavy Equipment	**9.71**	**1.47**	**0.56**	**0.00**	**0.15**	**0.03**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.40**	**1.74**	**0.62**	**0.02**	**0.34**	**0.07**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-71. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Livestock Grazing Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	9.70	1.45	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.04	0.00	0.01	0.02	0.00
Subtotal: Heavy Equipment	**9.70**	**1.46**	**0.04**	**0.00**	**0.01**	**0.02**	**0.00**
Commuting Vehicles - Fugitive Dust	1.67	0.25	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.01	0.01	0.06	0.01	0.19	0.04	0.00
Subtotal: Commuting Vehicles	**1.69**	**0.26**	**0.06**	**0.01**	**0.19**	**0.04**	**0.00**
Total	**11.39**	**1.72**	**0.10**	**0.02**	**0.21**	**0.06**	**0.01**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-72. Summary of Output - Alternative A
Total Annual Emissions from Vegetation Projects - Year 2001

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.01	0.01	0.28	0.01	0.09	0.02	0.00
Subtotal: Heavy Equipment	**0.27**	**0.05**	**0.28**	**0.01**	**0.09**	**0.02**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.16**	**0.19**	**0.29**	**0.01**	**0.14**	**0.03**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-73. Summary of Output - Alternative A
Total Annual Emissions from Vegetation Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.15**	**0.17**	**0.02**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-74. Summary of Output - Alternative A
Total Annual Emissions from Vegetation Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.14**	**0.17**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-75. Summary of Output - Alternative B
Total Annual Emissions from Vegetation Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.15**	**0.17**	**0.02**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-76. Summary of Output - Alternative B
Total Annual Emissions from Vegetation Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.14**	**0.17**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-77. Summary of Output - Alternative C
Total Annual Emissions from Vegetation Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.15**	**0.17**	**0.02**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-78. Summary of Output - Alternative C
Total Annual Emissions from Vegetation Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.14**	**0.17**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-79. Summary of Output - Alternative D
Total Annual Emissions from Vegetation Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.15**	**0.17**	**0.02**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-80. Summary of Output - Alternative D
Total Annual Emissions from Vegetation Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.14**	**0.17**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-81. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Vegetation Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.15**	**0.17**	**0.02**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-82. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Vegetation Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	0.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal: Heavy Equipment	**0.26**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commuting Vehicles - Fugitive Dust	0.88	0.13	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.00	0.00	0.01	0.00	0.05	0.01	0.00
Subtotal: Commuting Vehicles	**0.88**	**0.13**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**
Total	**1.14**	**0.17**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-83. Summary of Output - Alternative A
Total Annual Emissions from Fire Management Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.50	0.00	0.93	0.31	0.03
Subtotal: Heavy Equipment	**20.29**	**0.07**	**0.50**	**0.00**	**0.93**	**0.31**	**0.03**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.76**	**0.78**	**0.68**	**0.04**	**1.58**	**0.61**	**0.06**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-84. Summary of Output - Alternative A
Total Annual Emissions from Fire Management Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.03	0.00	0.68	0.13	0.01
Subtotal: Heavy Equipment	**20.28**	**0.06**	**0.03**	**0.00**	**0.68**	**0.13**	**0.01**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.74**	**0.76**	**0.21**	**0.04**	**1.33**	**0.43**	**0.04**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-85. Summary of Output - Alternative B
Total Annual Emissions from Fire Management Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.50	0.00	0.93	0.31	0.03
Subtotal: Heavy Equipment	**20.29**	**0.07**	**0.50**	**0.00**	**0.93**	**0.31**	**0.03**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.76**	**0.78**	**0.68**	**0.04**	**1.58**	**0.61**	**0.06**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-86. Summary of Output - Alternative B
Total Annual Emissions from Fire Management Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.03	0.00	0.68	0.13	0.01
Subtotal: Heavy Equipment	**20.28**	**0.06**	**0.03**	**0.00**	**0.68**	**0.13**	**0.01**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.74**	**0.76**	**0.21**	**0.04**	**1.33**	**0.43**	**0.04**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

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Table J-87. Summary of Output - Alternative C
Total Annual Emissions from Fire Management Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.50	0.00	0.93	0.31	0.03
Subtotal: Heavy Equipment	**20.29**	**0.07**	**0.50**	**0.00**	**0.93**	**0.31**	**0.03**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.76**	**0.78**	**0.68**	**0.04**	**1.58**	**0.61**	**0.06**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-88. Summary of Output - Alternative C
Total Annual Emissions from Fire Management Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.03	0.00	0.68	0.13	0.01
Subtotal: Heavy Equipment	**20.28**	**0.06**	**0.03**	**0.00**	**0.68**	**0.13**	**0.01**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.74**	**0.76**	**0.21**	**0.04**	**1.33**	**0.43**	**0.04**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-89. Summary of Output - Alternative D
Total Annual Emissions from Fire Management Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.50	0.00	0.93	0.31	0.03
Subtotal: Heavy Equipment	**20.29**	**0.07**	**0.50**	**0.00**	**0.93**	**0.31**	**0.03**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.76**	**0.78**	**0.68**	**0.04**	**1.58**	**0.61**	**0.06**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-90. Summary of Output - Alternative D
Total Annual Emissions from Fire Management Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.03	0.00	0.68	0.13	0.01
Subtotal: Heavy Equipment	**20.28**	**0.06**	**0.03**	**0.00**	**0.68**	**0.13**	**0.01**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.74**	**0.76**	**0.21**	**0.04**	**1.33**	**0.43**	**0.04**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-91. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Fire Management Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.50	0.00	0.93	0.31	0.03
Subtotal: Heavy Equipment	**20.29**	**0.07**	**0.50**	**0.00**	**0.93**	**0.31**	**0.03**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.76**	**0.78**	**0.68**	**0.04**	**1.58**	**0.61**	**0.06**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-92. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Fire Management Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	20.26	0.04	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.03	0.00	0.68	0.13	0.01
Subtotal: Heavy Equipment	**20.28**	**0.06**	**0.03**	**0.00**	**0.68**	**0.13**	**0.01**
Commuting Vehicles - Fugitive Dust	4.42	0.66	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.05	0.05	0.17	0.03	0.64	0.30	0.03
Subtotal: Commuting Vehicles	**4.46**	**0.71**	**0.17**	**0.03**	**0.64**	**0.30**	**0.03**
Total	**24.74**	**0.76**	**0.21**	**0.04**	**1.33**	**0.43**	**0.04**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-93. Summary of Output - Alternative A
Total Annual Emissions from Forest and Woodlands Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	19.14	2.87	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.14	0.00	1.01	0.34	0.03
Subtotal: Heavy Equipment	**19.16**	**2.90**	**0.14**	**0.00**	**1.01**	**0.34**	**0.03**
Commuting Vehicles - Fugitive Dust	3.14	0.47	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.03	0.03	0.11	0.02	0.26	0.08	0.01
Subtotal: Commuting Vehicles	**3.17**	**0.49**	**0.11**	**0.02**	**0.26**	**0.08**	**0.01**
Total	**22.33**	**3.39**	**0.25**	**0.02**	**1.28**	**0.42**	**0.04**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-94. Summary of Output - Alternative A
Total Annual Emissions from Forest and Woodlands Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	19.14	2.87	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.02	0.00	0.79	0.14	0.01
Subtotal: Heavy Equipment	**19.16**	**2.89**	**0.02**	**0.00**	**0.79**	**0.14**	**0.01**
Commuting Vehicles - Fugitive Dust	3.14	0.47	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.03	0.03	0.11	0.02	0.26	0.08	0.01
Subtotal: Commuting Vehicles	**3.17**	**0.49**	**0.11**	**0.02**	**0.26**	**0.08**	**0.01**
Total	**22.32**	**3.39**	**0.14**	**0.02**	**1.06**	**0.21**	**0.02**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-95. Summary of Output - Alternative B
Total Annual Emissions from Forest and Woodlands Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	12.64	1.90	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.14	0.00	1.01	0.34	0.03
Subtotal: Heavy Equipment	**12.66**	**1.92**	**0.14**	**0.00**	**1.01**	**0.34**	**0.03**
Commuting Vehicles - Fugitive Dust	1.98	0.30	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.02	0.02	0.07	0.01	0.17	0.05	0.00
Subtotal: Commuting Vehicles	**2.00**	**0.31**	**0.07**	**0.01**	**0.17**	**0.05**	**0.00**
Total	**14.66**	**2.23**	**0.21**	**0.01**	**1.18**	**0.39**	**0.04**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-96. Summary of Output - Alternative B
Total Annual Emissions from Forest and Woodlands Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	12.64	1.90	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.02	0.00	0.79	0.14	0.01
Subtotal: Heavy Equipment	**12.66**	**1.92**	**0.02**	**0.00**	**0.79**	**0.14**	**0.01**
Commuting Vehicles - Fugitive Dust	1.98	0.30	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.02	0.02	0.07	0.01	0.17	0.05	0.00
Subtotal: Commuting Vehicles	**2.00**	**0.31**	**0.07**	**0.01**	**0.17**	**0.05**	**0.00**
Total	**14.66**	**2.23**	**0.09**	**0.01**	**0.96**	**0.19**	**0.02**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-97. Summary of Output - Alternative C
Total Annual Emissions from Forest and Woodlands Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	33.96	5.09	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.14	0.00	1.01	0.34	0.03
Subtotal: Heavy Equipment	**33.98**	**5.12**	**0.14**	**0.00**	**1.01**	**0.34**	**0.03**
Commuting Vehicles - Fugitive Dust	5.28	0.79	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.04	0.04	0.18	0.04	0.43	0.12	0.01
Subtotal: Commuting Vehicles	**5.32**	**0.83**	**0.18**	**0.04**	**0.43**	**0.12**	**0.01**
Total	**39.31**	**5.95**	**0.32**	**0.04**	**1.44**	**0.46**	**0.05**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-98. Summary of Output - Alternative C
Total Annual Emissions from Forest and Woodlands Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	33.96	5.09	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.02	0.00	0.79	0.14	0.01
Subtotal: Heavy Equipment	**33.98**	**5.12**	**0.02**	**0.00**	**0.79**	**0.14**	**0.01**
Commuting Vehicles - Fugitive Dust	5.28	0.79	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.04	0.04	0.18	0.04	0.43	0.12	0.01
Subtotal: Commuting Vehicles	**5.32**	**0.83**	**0.18**	**0.04**	**0.43**	**0.12**	**0.01**
Total	**39.30**	**5.95**	**0.20**	**0.04**	**1.23**	**0.26**	**0.03**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-99. Summary of Output - Alternative D
Total Annual Emissions from Forest and Woodlands Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	45.92	6.89	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.14	0.00	1.01	0.34	0.03
Subtotal: Heavy Equipment	**45.94**	**6.91**	**0.14**	**0.00**	**1.01**	**0.34**	**0.03**
Commuting Vehicles - Fugitive Dust	7.33	1.10	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.06	0.05	0.24	0.05	0.59	0.15	0.02
Subtotal: Commuting Vehicles	**7.39**	**1.15**	**0.24**	**0.05**	**0.59**	**0.15**	**0.02**
Total	**53.33**	**8.06**	**0.38**	**0.05**	**1.60**	**0.50**	**0.05**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-100. Summary of Output - Alternative D
Total Annual Emissions from Forest and Woodlands Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	45.92	6.89	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.02	0.00	0.79	0.14	0.01
Subtotal: Heavy Equipment	**45.94**	**6.91**	**0.02**	**0.00**	**0.79**	**0.14**	**0.01**
Commuting Vehicles - Fugitive Dust	7.33	1.10	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.06	0.05	0.24	0.05	0.59	0.15	0.02
Subtotal: Commuting Vehicles	**7.39**	**1.15**	**0.24**	**0.05**	**0.59**	**0.15**	**0.02**
Total	**53.32**	**8.06**	**0.27**	**0.05**	**1.38**	**0.29**	**0.03**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-101. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Forest and Woodlands Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	33.96	5.09	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.14	0.00	1.01	0.34	0.03
Subtotal: Heavy Equipment	**33.98**	**5.12**	**0.14**	**0.00**	**1.01**	**0.34**	**0.03**
Commuting Vehicles - Fugitive Dust	5.28	0.79	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.04	0.04	0.18	0.04	0.43	0.12	0.01
Subtotal: Commuting Vehicles	**5.32**	**0.83**	**0.18**	**0.04**	**0.43**	**0.12**	**0.01**
Total	**39.31**	**5.95**	**0.32**	**0.04**	**1.44**	**0.46**	**0.05**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-102. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Forest and Woodlands Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	33.96	5.09	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.02	0.02	0.02	0.00	0.79	0.14	0.01
Subtotal: Heavy Equipment	**33.98**	**5.12**	**0.02**	**0.00**	**0.79**	**0.14**	**0.01**
Commuting Vehicles - Fugitive Dust	5.28	0.79	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.04	0.04	0.18	0.04	0.43	0.12	0.01
Subtotal: Commuting Vehicles	**5.32**	**0.83**	**0.18**	**0.04**	**0.43**	**0.12**	**0.01**
Total	**39.30**	**5.95**	**0.20**	**0.04**	**1.23**	**0.26**	**0.03**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

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Table J-103. Summary of Output - Alternative A
Summary of ROWs and Corridors Emissions - Year 2001

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	2.59	0.39	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.41	0.41	8.12	0.18	2.68	0.68	0.07
Subtotal: Heavy Equipment	**3.00**	**0.80**	**8.12**	**0.18**	**2.68**	**0.68**	**0.07**
Commuting Vehicles - Fugitive Dust	14.97	2.24	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.85	1.70	7.87	1.55	19.59	4.72	0.47
Subtotal: Commuting Vehicles	**16.82**	**3.94**	**7.87**	**1.55**	**19.59**	**4.72**	**0.47**
Total	**19.82**	**4.74**	**15.99**	**1.72**	**22.27**	**5.40**	**0.54**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-104. Summary of Output - Alternative A
Summary of ROWs and Corridors Emissions - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	2.59	0.39	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.15	0.15	4.14	0.02	0.90	0.25	0.02
Subtotal: Heavy Equipment	**2.74**	**0.54**	**4.14**	**0.02**	**0.90**	**0.25**	**0.02**
Commuting Vehicles - Fugitive Dust	14.97	2.24	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.85	1.70	7.87	1.55	19.59	4.72	0.47
Subtotal: Commuting Vehicles	**16.82**	**3.94**	**7.87**	**1.55**	**19.59**	**4.72**	**0.47**
Total	**19.56**	**4.48**	**12.01**	**1.57**	**20.49**	**4.97**	**0.50**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-105. Summary of Output - Alternative A
Summary of ROWs and Corridors Emissions - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	2.59	0.39	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.01	0.01	0.35	0.02	0.09	0.13	0.01
Subtotal: Heavy Equipment	**2.60**	**0.40**	**0.35**	**0.02**	**0.09**	**0.13**	**0.01**
Commuting Vehicles - Fugitive Dust	14.97	2.24	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.85	1.70	7.87	1.55	19.59	4.72	0.47
Subtotal: Commuting Vehicles	**16.82**	**3.94**	**7.87**	**1.55**	**19.59**	**4.72**	**0.47**
Total	**19.42**	**4.34**	**8.22**	**1.57**	**19.68**	**4.85**	**0.49**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-106. Summary of Output - Alternative B
Summary of ROWs and Corridors Emissions - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	0.49	0.07	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.03	0.03	0.79	0.00	0.17	0.05	0.00
Subtotal: Heavy Equipment	**0.52**	**0.10**	**0.79**	**0.00**	**0.17**	**0.05**	**0.00**
Commuting Vehicles - Fugitive Dust	2.84	0.43	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.35	0.32	1.50	0.29	3.72	0.90	0.09
Subtotal: Commuting Vehicles	**3.20**	**0.75**	**1.50**	**0.29**	**3.72**	**0.90**	**0.09**
Total	**3.72**	**0.85**	**2.28**	**0.30**	**3.89**	**0.94**	**0.09**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

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Table J-107. Summary of Output - Alternative B
Summary of ROWs and Corridors Emissions - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	0.49	0.07	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.00	0.00	0.07	0.00	0.02	0.02	0.00
Subtotal: Heavy Equipment	**0.49**	**0.08**	**0.07**	**0.00**	**0.02**	**0.02**	**0.00**
Commuting Vehicles - Fugitive Dust	2.84	0.43	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	0.35	0.32	1.50	0.29	3.72	0.90	0.09
Subtotal: Commuting Vehicles	**3.20**	**0.75**	**1.50**	**0.29**	**3.72**	**0.90**	**0.09**
Total	**3.69**	**0.82**	**1.56**	**0.30**	**3.74**	**0.92**	**0.09**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-108. Summary of Output - Alternative C
Summary of ROWs and Corridors Emissions - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	2.38	0.36	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.14	0.14	3.81	0.02	0.83	0.23	0.02
Subtotal: Heavy Equipment	**2.52**	**0.49**	**3.81**	**0.02**	**0.83**	**0.23**	**0.02**
Commuting Vehicles - Fugitive Dust	13.77	2.06	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.70	1.57	7.24	1.42	18.02	4.35	0.43
Subtotal: Commuting Vehicles	**15.48**	**3.63**	**7.24**	**1.42**	**18.02**	**4.35**	**0.43**
Total	**17.99**	**4.12**	**11.05**	**1.44**	**18.85**	**4.58**	**0.46**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-109. Summary of Output - Alternative C
Summary of ROWs and Corridors Emissions - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	2.38	0.36	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.01	0.01	0.32	0.02	0.08	0.12	0.01
Subtotal: Heavy Equipment	**2.39**	**0.37**	**0.32**	**0.02**	**0.08**	**0.12**	**0.01**
Commuting Vehicles - Fugitive Dust	13.77	2.06	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.70	1.57	7.24	1.42	18.02	4.35	0.43
Subtotal: Commuting Vehicles	**15.48**	**3.63**	**7.24**	**1.42**	**18.02**	**4.35**	**0.43**
Total	**17.87**	**3.99**	**7.56**	**1.44**	**18.10**	**4.46**	**0.45**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-110. Summary of Output - Alternative D
Summary of ROWs and Corridors Emissions - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	2.61	0.39	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.15	0.15	4.18	0.02	0.91	0.25	0.03
Subtotal: Heavy Equipment	**2.76**	**0.54**	**4.18**	**0.02**	**0.91**	**0.25**	**0.03**
Commuting Vehicles - Fugitive Dust	15.12	2.26	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.87	1.72	7.95	1.56	19.78	4.77	0.48
Subtotal: Commuting Vehicles	**16.99**	**3.98**	**7.95**	**1.56**	**19.78**	**4.77**	**0.48**
Total	**19.76**	**4.52**	**12.13**	**1.58**	**20.70**	**5.02**	**0.50**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-111. Summary of Output - Alternative D
Summary of ROWs and Corridors Emissions - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	2.61	0.39	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.01	0.01	0.35	0.02	0.09	0.13	0.01
Subtotal: Heavy Equipment	**2.62**	**0.40**	**0.35**	**0.02**	**0.09**	**0.13**	**0.01**
Commuting Vehicles - Fugitive Dust	15.12	2.26	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.87	1.72	7.95	1.56	19.78	4.77	0.48
Subtotal: Commuting Vehicles	**16.99**	**3.98**	**7.95**	**1.56**	**19.78**	**4.77**	**0.48**
Total	**19.62**	**4.38**	**8.30**	**1.58**	**19.88**	**4.90**	**0.49**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-112. Summary of Output - Alternative E (Preferred Alternative)
Summary of ROWs and Corridors Emissions - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Heavy Equipment - Fugitive Dust	2.59	0.39	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.15	0.15	4.14	0.02	0.90	0.25	0.02
Subtotal: Heavy Equipment	**2.74**	**0.54**	**4.14**	**0.02**	**0.90**	**0.25**	**0.02**
Commuting Vehicles - Fugitive Dust	14.97	2.24	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.85	1.70	7.87	1.55	19.59	4.72	0.47
Subtotal: Commuting Vehicles	**16.82**	**3.94**	**7.87**	**1.55**	**19.59**	**4.72**	**0.47**
Total	**19.56**	**4.48**	**12.01**	**1.57**	**20.49**	**4.97**	**0.50**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-113. Summary of Output - Alternative E (Preferred Alternative)
Summary of ROWs and Corridors Emissions - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Fugitive Dust	2.59	0.39	---	---	---	---	---
Heavy Equipment - Vehicle Exhaust[a]	0.01	0.01	0.35	0.02	0.09	0.13	0.01
Subtotal: Heavy Equipment	**2.60**	**0.40**	**0.35**	**0.02**	**0.09**	**0.13**	**0.01**
Commuting Vehicles - Fugitive Dust	14.97	2.24	---	---	---	---	---
Commuting Vehicles - Vehicle Exhaust	1.85	1.70	7.87	1.55	19.59	4.72	0.47
Subtotal: Commuting Vehicles	**16.82**	**3.94**	**7.87**	**1.55**	**19.59**	**4.72**	**0.47**
Total	**19.42**	**4.34**	**8.22**	**1.57**	**19.68**	**4.85**	**0.49**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-114. Total of All OHV Emissions

Year	Emissions (Tons/Year)				
	Hydro-carbons (HC)	Carbon Monoxide (CO)	Nitrogen Oxides (NO_x)	Particulate Matter (PM)	HAPs[a]
2000	229.98	427.44	2.94	7.00	23.00
2005	348.80	956.41	4.47	11.18	34.88
2010	449.97	1,201.68	6.29	14.76	45.00
2020	543.49	1,482.84	8.35	17.76	54.35

[a] Hazardous air pollutants; assumed equal to HC * 0.10.

Table J-115. Summary of Output - Alternative A
Total Annual Emissions from Road Maintenance Projects - Year 2001

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.01	0.01	0.16	0.00	0.05	0.01	0.00
Total	**1.37**	**0.15**	**0.16**	**0.00**	**0.05**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-116. Summary of Output - Alternative A
Total Annual Emissions from Road Maintenance Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.08	0.00	0.02	0.01	0.00
Total	**1.36**	**0.15**	**0.08**	**0.00**	**0.02**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-117. Summary of Output - Alternative A
Total Annual Emissions from Road Maintenance Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Total	**1.36**	**0.15**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-118. Summary of Output - Alternative B
Total Annual Emissions from Road Maintenance Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.08	0.00	0.02	0.01	0.00
Total	**1.36**	**0.15**	**0.08**	**0.00**	**0.02**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-119. Summary of Output - Alternative B
Total Annual Emissions from Road Maintenance Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Total	**1.36**	**0.15**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-120. Summary of Output - Alternative C
Total Annual Emissions from Road Maintenance Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	0.94	0.10	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.05	0.00	0.01	0.00	0.00
Total	**0.95**	**0.10**	**0.05**	**0.00**	**0.01**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

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Table J-121. Summary of Output - Alternative C
Total Annual Emissions from Road Maintenance Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	0.94	0.10	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.94**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-122. Summary of Output - Alternative D
Total Annual Emissions from Road Maintenance Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.08	0.00	0.02	0.01	0.00
Total	**1.36**	**0.15**	**0.08**	**0.00**	**0.02**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-123. Summary of Output - Alternative D
Total Annual Emissions from Road Maintenance Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Total	**1.36**	**0.15**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-124. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Road Maintenance Projects - Year 2011

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.08	0.00	0.02	0.01	0.00
Total	**1.36**	**0.15**	**0.08**	**0.00**	**0.02**	**0.01**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table J-125. Summary of Output - Alternative E (Preferred Alternative)
Total Annual Emissions from Road Maintenance Projects - Year 2020

Activity	Annual Emissions (Tons)						
	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs[b]
Road Maintenance - Fugitive Dust	1.36	0.15	---	---	---	---	---
Road Maintenance - Combustive Emissions[a]	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Total	**1.36**	**0.15**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**

[a] $PM_{2.5}$ assumed = PM_{10} for this source.

[b] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

6.0 REFERENCES

BLM (Bureau of Land Management). 2002. Fire Management Planning. BLM-IM-2002-034. U.S. Department of the Interior, Bureau of Land Management.

BLM. 2005a. Preliminary Final Reasonable Foreseeable Development Scenario for Oil and Gas. Prepared by Dean Stilwell and Fred Crockett, Reservoir Management Group. U.S. Department of the Interior, Bureau of Land Management. Casper Field Office, Wyoming. September.

BLM. 2005b. Geographic Information System (GIS) Data.

EPA (Environmental Protection Agency). 2003. MOBILE6 Vehicle Emission Modeling Software. U.S. Environmental Protection Agency. Available on Internet: http://www.epa.gov/otaq/m6.htm.

EPA. 2004. Draft NONROAD 2004 Model. U.S. Environmental Protection Agency. Available on Internet: http://www.epa.gov/otaq/nonrdmdl.htm.

EPA. 2005. EPA Air Data, Monitor Values Report – Criteria Air Pollutants. U.S. Environmental Protection Agency. Available on Internet: http://www.epa.gov/air/data/monvals.html?st~WY~Wyoming. Accessed August 18, 2005.

Hanify, C. 2006. Personal communication between Linda Slone, Bureau of Land Management and Chris Hanify. February 2006.

MacDonald, B. 2005. Personal communication between Linda Slone, Bureau of Land Management and Bruce MacDonald. September 19, 2005.

Malm, W.C. 1999. Introduction to Visibility. Cooperative Institute for Research in the Atmosphere (CIRA), NPS Visibility Program. Colorado State University, Fort Collins, CO. Available on Internet: http://www2.nature.nps.gov/air/vis/Intro_to_Visibility.pdf.

Wyoming DEQ (Wyoming Department of Environmental Quality). 2000. Memorandum on Permitting Generators in Coalbed Methane (CBM). Wyoming Department of Environmental Quality, Air Quality Division. Available on Internet http://deq.state.wy.us/aqd/downloads/cbm/cbm-diesel.pdf.

Wyoming DEQ. 2004. Wyoming Air Quality Standards and Regulations. Wyoming Department of Environmental Quality–Air Quality Division. Available on Internet: http://deq.state.wy.us/aqd/standards.asp.

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APPENDIX K

Best Management Practices

Appendix K
Best Management Practices

Best management practices (BMPs) are environmental protection measures developed by governmental bodies, industry, and scientific or other working groups. These practices are not stipulations, but rather serve to improve design and reduce the environmental impact of proposed BLM management actions in the planning area. Public land users are encouraged to review these practices, incorporate them where appropriate, or develop better methods for achieving the same goal.

The purpose of this section is not to attempt to select certain practices or designs and require that only those be used. It is not possible to evaluate all the known practices and make determinations as to which are best. What is best must be determined as a result of a site-specific investigation of the proposed management action. No one management practice is best suited to every site or situation. BMPs must be adaptive and monitored regularly to evaluate effectiveness.

The following sources contain significant information regarding the development and implementation of BMPs. These references are not to be considered as exclusive sources of information; rather, they should be used as a starting point when evaluating specific BMPs during the project design and implementation.

Wyoming Department of Environmental Quality
http://deq.state.wy.us/wqd/watershed/#Planning

Bureau of Land Management
http://www.blm.gov/bmp/
http://www.blm.gov/nhp/efoia/wo/fy05/im2005-069.htm

U.S. Environmental Protection Agency
http://www.epa.gov/owow/nps/
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm

U.S. Department of Agriculture – Natural Resources Conservation Service
http://www.nrcs.usda.gov/Technical/Standards/nhcp.html
http://www.glti.nrcs.usda.gov/technical/publications/nrph.html

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APPENDIX L

Air Quality Mitigation Matrix

Appendix L
Air Quality Mitigation Matrix

The following table outlines options for air quality mitigation in the planning area.

Table L-1. Potential Mitigation Measures for Air Quality Impacts Associated with the Proposed Casper Revised Resource Management Plan

Type of Mitigation	Estimated Cost of Mitigation	Environmental Liabilities	Environmental Benefit	Potential Limitations
Nitrogen Oxide (NO_X) and Carbon Monoxide (CO) Mitigation Measures				
Utilize selective catalytic reduction (SCR) on drill rig engines and compressors.	Relatively expensive as compared to nonselective catalysts. Typical costs are $125/hp (EPA Cost Control Manual, January 2002) for compressors.	Requires the use and storage of ammonia, which presents health and safety issues. Results in increased ammonia emissions, which may contribute to the formation of ammonium sulfates and increased visibility degradation.	NO_X emission rate for compressors reduced to 0.1 g/hp-hr; reduced ammonium nitrate formation and resulting visibility impacts. Application to drill rig engines may result in substantial NO_x reduction.	Not applicable for 2-stroke engines.
Application of nonselective catalytic reduction on drill rig engines and compressors	$5,000 to $25,000 per unit	Regeneration/disposal costs for catalysts.	As a result of the BACT process, average NO_X emission rates for Wyoming compressor engines 100 hp or greater is 1.0 g/hp-hr; the application of nonselective catalysts may reduce the NO_X emission rate to 0.7 g/hp-hr for some types of engines. Application to drill rig engines may result in substantial NO_x reduction (although less reduction than with SCR).	Not applicable for lean-burn or 2-stroke engines.

Table L-1. Potential Mitigation Measures for Air Quality Impacts Associated with the Proposed Casper Revised Resource Management Plan (Continued)

Type of Mitigation	Estimated Cost of Mitigation	Environmental Liabilities	Environmental Benefit	Potential Limitations
Nitrogen Oxide (NO_X) and Carbon Monoxide (CO) Mitigation Measures (Continued)				
Utilize compressors driven by electrical motors.	Capital costs equal 40% of gas turbine costs; operating cost dependent on the location of high voltage powerlines.	Displaced air emissions from compressor units to electric generating stations (EGS).	May displace air emissions away from sensitive Class I areas; moderate emission reduction near compressor station. Also, typically emissions at an EGS are more heavily controlled than at individual compressor stations, so the displaced emissions are also lower than if emitted by a compressor station.	Requires high voltage power lines.
Increased diameter of sales pipelines	With larger diameter of sales pipelines, capital costs increase while operating costs decrease.	Slightly more surface disturbance.	Lower pipeline pressures, resulting in lower compression hp requirements.	None
Centralization of dehydrator units	Variable		Minor reduction in emissions.	Requires infrastructure to be feasible.
Reduce number of vehicle miles driven and unnecessary idling.	Minor		Minor to moderate emissions reduction.	
Utilize wind-generated electricity to power compressors.	Capital costs are very large.	Visual impacts from generation equipment; increased mortality of birds, including raptors.	Reduced use of fossil fuels and associated emissions.	Location of wind-generation facilities is critical; requires consistent strong winds for economic operation and high voltage transmission lines between generation facility and compressor stations.

Table L-1. Potential Mitigation Measures for Air Quality Impacts Associated with the Proposed Casper Revised Resource Management Plan (Continued)

Type of Mitigation	Estimated Cost of Mitigation	Environmental Liabilities	Environmental Benefit	Potential Limitations
Nitrogen Oxide (NO_X) and Carbon Monoxide (CO) Mitigation Measures (Continued)				
Increased emissions monitoring	Minor to moderate	None	Allows better planning of when, and especially where to allow future emissions to occur and when/where to provide for additional emissions mitigation. The Wyoming DEQ AQD currently has an emission tracking agreement with the BLM. The *Amended Letter of Agreement for Tracking Nitrogen Oxide Emissions* dated April 2000 calls for annual reports tracking changes in NO_X emission beginning January 1, 1996.	The monitoring of emission sources provides improved information for estimating impacts, but does not necessarily reduce the magnitude of the impacts.
Increased ambient pollutant monitoring	Moderate	None	Will measure impacts from pollutant sources of concern if correctly located.	
Reduced rate of development	Short-term loss of state and federal royalties.	Emissions generated at a lower rate for a longer period.	Peak emissions and associated impacts reduced.	Economic limitations - A minimum production rate is required to cost-effectively develop the resource while maintaining the processing and transportation infrastructure.

Table L-1. Potential Mitigation Measures for Air Quality Impacts Associated with the Proposed Casper Revised Resource Management Plan (Continued)

Type of Mitigation	Estimated Cost of Mitigation	Environmental Liabilities	Environmental Benefit	Potential Limitations
Particulate Matter (PM) Mitigation Measures				
Increase water application rate to achieve greater than 50% fugitive dust control.	Varies with the source of the water and the trucking distance.	None	Can achieve fugitive dust control rates up to 95%	Diminishing returns per gallon of water applied; water must be applied at much greater rates to achieve control efficiencies greater than 75%
Unpaved road dust suppressant treatments	$2,400 to $50,000 per mile	Treatment chemicals have the potential to negatively impact water quality.	Estimated 20% to 100% reduction in fugitive dust emissions.	None
Particulate Matter Mitigation Measures (Continued)				
Administrative control of speed limits	Relatively low costs for installing signs and enforcement.	None	Slower speeds may provide 20% to 50% reduction in dust emissions.	State or county may retain authority for determining speed limits on primary roads.
Installation of remote telemetry	Approximately $13,000 per well	None	Reduction in vehicle miles traveled and associated vehicle emissions during production operations; no benefit for construction operations, which generate the greatest amount of PM.	Effective only for the production phase of the operations; would have no impact on construction activities that generate the greatest amount of PM.
Gravel roads	Approximately $9,000 per mile	None	Estimated 30% reduction in fugitive road dust (NOTE: use of additional low-impact road design specifications [e.g., 95% base compaction prior to placement of gravel; use of non-chlorine based dust abatement chemicals] can provide greater reduction).	None

Table L-1. Potential Mitigation Measures for Air Quality Impacts Associated with the Proposed Casper Revised Resource Management Plan (Continued)

Type of Mitigation	Estimated Cost of Mitigation	Environmental Liabilities	Environmental Benefit	Potential Limitations
Paved roads	Approximately $11,000 to $60,000 per mile	None	Estimated 90% reduction in fugitive road dust.	None
Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants (HAPs) Mitigation Measures				
Flareless ("green") completion	Substantial cost for equipment and infrastructure (condensate pipeline), with the payoff in about one year at $3/Mcf.		Minor reduction in emissions; substantial reduction in noise and night-time disturbance.	Requires infrastructure to be feasible.
Condensate tank vents, carbon canisters or other VOC capture to the vent discharge	Minor costs		Minor emission reduction	

AQD	Air Quality Division
BACT	best available control technology
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
g	gram
HAP	hazardous air pollutants
hp	horsepower
hr.	hour
NO_x	nitrogen oxides
PM	particulate matter
VOC	volatile organic compound

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APPENDIX M

Surface Disturbance and Reasonable Foreseeable Actions

Appendix M
Surface Disturbance and Reasonable Foreseeable Actions

This appendix includes two tables that provide information on surface disturbance and reasonable foreseeable actions within the planning area. Table M-1 provides projected acres of surface disturbance by resource. Table M-2 provides foreseeable development projects by resource.

Table M-1. Surface Disturbance

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Fire Management and Ecology					
Management Ignited Prescribed Fire					
Acres Short-Term Disturbance from BLM Actions	20,000	20,000	20,000	20,000	20,000
Acres Reclaimed from BLM Actions	20,000	20,000	20,000	20,000	20,000
Acres Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres Short-Term Disturbance from Non-BLM Actions	105,000	105,000	105,000	105,000	105,000
Acres Reclaimed from Non-BLM Actions	105,000	105,000	105,000	105,000	105,000
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0
Fuels Management - Mechanical Treatments (Hand Work)					
Acres Short-Term Disturbance from BLM Actions	600	600	600	600	600
Acres Reclaimed from BLM Actions	600	600	600	600	600
Acres Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres Short-Term Disturbance from Non-BLM Actions	3,150	3,150	3,150	3,150	3,150
Acres Reclaimed from Non-BLM Actions	3,150	3,150	3,150	3,150	3,150
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Forest and Woodlands					
Silviculture Treatments, Forest Products, and Insect Control					
Acres Short-Term Disturbance from BLM Actions	1,000	600	1,600	3,200	1,600
Acres Reclaimed from BLM Actions	1,000	600	1,600	3,200	1,600
Acres Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres Short-Term Disturbance from Non-BLM Actions	8,400	8,400	8,400	8,400	8,400
Acres Reclaimed from Non-BLM Actions	8,400	8,400	8,400	8,400	8,400
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0
Livestock Grazing					
Spring Development					
Acres Short-Term Disturbance from BLM Actions	32	32	32	32	32
Acres Reclaimed from BLM Actions	32	32	32	32	32
Acres Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres Short-Term Disturbance from Non-BLM Actions	168	168	168	168	168
Acres Reclaimed from Non-BLM Actions	168	168	168	168	168
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0
Pipeline Development					
Acres Short-Term Disturbance from BLM Actions	36	36	36	36	36
Acres Reclaimed from BLM Actions	36	36	36	36	36
Acres Long-Term Disturbance from BLM Actions	0	0	0	0	0

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Acres Short-Term Disturbance from Non-BLM Actions	189	189	189	189	189
Acres Reclaimed from Non-BLM Actions	189	189	189	189	189
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0
Reservoir/Pit Development					
Acres Short-Term Disturbance from BLM Actions	80	80	80	80	80
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from BLM Actions	80	80	80	80	80
Acres Short-Term Disturbance from Non-BLM Actions	420	420	420	420	420
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from Non-BLM Actions	420	420	420	420	420
Fence Development					
Acres Short-Term Disturbance from BLM Actions	432	432	432	432	432
Acres Reclaimed from BLM Actions	432	432	432	432	432
Acres Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres Short-Term Disturbance from Non-BLM Actions	2,268	2,268	2,268	2,268	2,268
Acres Reclaimed from Non-BLM Actions	2,268	2,268	2,268	2,268	2,268
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Well Development					
Acres Short-Term Disturbance from BLM Actions	13	13	13	13	13
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from BLM Actions	13	13	13	13	13
Acres Short-Term Disturbance from Non-BLM Actions	68	68	68	68	68
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from Non-BLM Actions	68	68	68	68	68
Reservoir Maintenance Development					
Acres Short-Term Disturbance from BLM Actions	40	40	40	40	40
Acres Reclaimed from BLM Actions	40	40	40	40	40
Acres Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres Short-Term Disturbance from Non-BLM Actions	210	210	210	210	210
Acres Reclaimed from Non-BLM Actions	210	210	210	210	210
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0
Mineral Resources - Locatable					
Acres Short-Term Disturbance from BLM Actions	620	580	620	900	620
Acres Reclaimed from BLM Actions	310	290	310	450	310
Acres Long-Term Disturbance from BLM Actions	310	290	310	450	310
Acres Short-Term Disturbance from Non-BLM Actions	498	498	498	498	498
Acres Reclaimed from Non-BLM Actions	249	249	249	249	249
Acres Long-Term Disturbance from Non-BLM Actions	249	249	249	249	249

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Mineral Resources - Coal					
Acres Short-Term Disturbance from BLM Actions	8,694	8,694	8,694	8,694	8,694
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from BLM Actions	8,694	8,694	8,694	8,694	8,694
Acres Short-Term Disturbance from Non-BLM Actions	800	800	800	800	800
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from Non-BLM Actions	800	800	800	800	800
Mineral Resources - Oil and Gas					
Acres Short-Term Disturbance from BLM Actions	16,347	1,787	14,938	16,180	16,285
Acres Reclaimed from BLM Actions	11,320	1,273	10,354	11,226	11,289
Acres Long-Term Disturbance from BLM Actions	5,027	514	4,584	4,954	4,996
Acres Short-Term Disturbance from Non-BLM Actions	7,344	7,344	7,344	7,344	7,344
Acres Reclaimed from Non-BLM Actions	5,084	5,084	5,084	5,084	5,084
Acres Long-Term Disturbance from Non-BLM Actions	2,260	2,260	2,260	2,260	2,260
Mineral Resources – Other Solid Leasables					
Acres Short-Term Disturbance from BLM Actions	0	0	0	0	0
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres Short-Term Disturbance from Non-BLM Actions	0	0	0	0	0
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Mineral Resources - Salables					
Acres Short-Term Disturbance from BLM Actions	1,100	1,060	1,320	1,860	1,360
Acres Reclaimed from BLM Actions	550	530	660	930	680
Acres Long-Term Disturbance from BLM Actions	550	530	660	930	680
Acres Short-Term Disturbance from Non-BLM Actions	884	884	884	884	884
Acres Reclaimed at Non-BLM Actions	442	442	442	442	442
Acres Long-Term Disturbance from Non-BLM Actions	442	442	442	442	442
Off-Highway Vehicles					
Acres Short-Term Disturbance from BLM Actions	200	240	280	680	680
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from BLM Actions	200	240	280	680	680
Acres Short-Term Disturbance from Non-BLM Actions	3,570	3,570	3,570	3,570	3,570
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from Non-BLM Actions	3,570	3,570	3,570	3,570	3,570
Recreation					
Acres Short-Term Disturbance from BLM Actions	0	2	4	6	6
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from BLM Actions	0	2	4	6	6
Acres Short-Term Disturbance from Non-BLM Actions	0	0	0	0	0
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Renewable Energy - Wind Energy Development					
Acres of Short-Term Disturbance from BLM Actions	281	0	281	281	281
Acres Reclaimed from BLM Actions	126	0	126	126	126
Acres of Long-Term Disturbance from BLM Actions	155	0	155	155	155
Acres of Short-Term Disturbance from Non-BLM Actions	1,475	1,475	1,475	1,475	1,475
Acres Reclaimed from Non-BLM Actions	664	664	664	664	664
Acres of Long-Term Disturbance from Non-BLM Actions	811	811	811	811	811
Rights-of-Way (ROW)					
Telephone and Fiber Optics					
Acres of Short-Term Disturbance from BLM Actions	203	39	187	205	203
Acres Reclaimed from BLM Actions	203	39	187	205	203
Acres of Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres of Short-Term Disturbance from Non-BLM Actions	1,066	1,066	1,066	1,066	1,066
Acres Reclaimed from Non-BLM Actions	1,066	1,066	1,066	1,066	1,066
Acres of Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0
Pipelines (Mineral and Water)					
Acres of Short-Term Disturbance from BLM Actions	3,754	713	3,454	3,792	3,754
Acres Reclaimed from BLM Actions	3,754	713	3,454	3,792	3,754
Acres of Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres of Short-Term Disturbance from Non-BLM Actions	19,709	19,709	19,709	19,709	19,709
Acres Reclaimed from Non-BLM Actions	19,709	19,709	19,709	19,709	19,709
Acres of Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Roads					
Acres of Short-Term Disturbance from BLM Actions	3,966	754	3,649	4,006	3,966
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from BLM Actions	3,966	754	3,649	4,006	3,966
Acres of Short-Term Disturbance from Non-BLM Actions	20,822	20,822	20,822	20,822	20,822
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from Non-BLM Actions	20,822	20,822	20,822	20,822	20,822
Powerlines					
Acres of Short-Term Disturbance from BLM Actions	1,835	349	1,688	1,853	1,835
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from BLM Actions	1,835	349	1,688	1,853	1,835
Acres of Short-Term Disturbance from Non-BLM Actions	9,634	9,634	9,634	9,634	9,634
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from Non-BLM Actions	9,634	9,634	9,634	9,634	9,634
Communication Sites					
Acres of Short-Term Disturbance from BLM Actions	24	5	22	24	24
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from BLM Actions	24	5	22	24	24
Acres of Short-Term Disturbance from Non-BLM Actions	126	126	126	126	126
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from Non-BLM Actions	126	126	126	126	126

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Other Facilities					
Acres of Short-Term Disturbance from BLM Actions	172	33	158	174	172
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from BLM Actions	172	33	158	174	172
Acres of Short-Term Disturbance from Non-BLM Actions	903	903	903	903	903
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from Non-BLM Actions	903	903	903	903	903
Transportation					
Road Maintenance					
Acres of Short-Term Disturbance from BLM Actions	61	61	61	61	61
Acres Reclaimed from BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from BLM Actions	61	61	61	61	61
Acres of Short-Term Disturbance from Non-BLM Actions	320	320	320	320	320
Acres Reclaimed from Non-BLM Actions	0	0	0	0	0
Acres of Long-Term Disturbance from Non-BLM Actions	320	320	320	320	320
Vegetation - Mechanical Treatments (Excluding Hand Work)					
Acres of Short-Term Disturbance from BLM Actions	500	500	500	500	500
Acres Reclaimed from BLM Actions	500	500	500	500	500
Acres of Long-Term Disturbance from BLM Actions	0	0	0	0	0
Acres of Short-Term Disturbance from Non-BLM Actions	2,625	2,625	2,625	2,625	2,625
Acres Reclaimed from Non-BLM Actions	2,625	2,625	2,625	2,625	2,625
Acres of Long-Term Disturbance from Non-BLM Actions	0	0	0	0	0

Table M-1. Surface Disturbance (Continued)

Type of Disturbance	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Cumulative Disturbance					
Total Acres Short-Term Disturbance from BLM Actions	59,990	36,650	58,689	63,649	61,274
Total Acres Reclaimed from BLM Actions	38,903	25,085	38,331	41,569	39,602
Total Acres Long-Term Disturbance from BLM Actions	21,087	11,565	20,358	22,080	21,672
Total Acres Short-Term Disturbance from Non-BLM Actions	189,649	189,649	189,649	189,649	189,649
Total Acres Reclaimed from Non-BLM Actions	149,224	149,224	149,224	149,224	149,224
Total Acres Long-Term Disturbance from Non-BLM Actions	40,425	40,425	40,425	40,425	40,425
Cumulative Long-Term Acres of Disturbance	**61,512**	**51,990**	**60,783**	**62,505**	**62,097**

Assumptions for Non-BLM Actions:

1. Calculation of surface disturbance for non-BLM oil and gas actions is based on the following percent federal and non-federal wells from WRMG's Oil and Gas Reasonable Foreseeable Development (BLM 2005f):
   - Baseline – 71% federal and 29% non-federal
   - Alternative A – 69% federal and 31% non-federal
   - Alternative B – 19% federal and 81% non-federal
   - Alternative C – 67% federal and 33% non-federal
   - Alternative D – 69% federal and 31% non-federal
   - Alternative E – 69% federal and 31% non-federal.

2. Calculation of surface disturbance for non-BLM coal development is based on the following actual mineral ownership within the coal development potential area:
   - 92% BLM-administered mineral estate and 8% non-BLM administered mineral estate

3. The amount of surface development for the remaining activities (excluding oil, gas, and coal) projected to occur within the planning area is assumed the same for BLM and non-BLM actions, regardless of land ownership.

   a. Calculation of surface disturbance for non-BLM other mineral actions (i.e., non-oil and gas) is based on the following:
      - 55% BLM-mineral estate and 45% non-BLM mineral estate in the planning area

   b. Calculation of surface disturbance for non-BLM other activities (i.e., non-mineral) is based on the following:
      - 16% BLM-administered Surface and 84% Non-BLM-administered surface in the planning area.

   c. The projected surface-disturbance acreage under all action alternatives for non-BLM activity should be the same as Alternative A since BLM decisions would not impact these activities. This correction will be made in the next version of this document.

BLM Bureau of Land Management

Appendix M – Surface Disturbance and Reasonable Foreseeable Actions

Table M-2. Reasonable Foreseeable Development

Type of Development	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Mineral Resources – Oil and Gas					
Federal Well Projections					
Existing Productive Federal Wells					
Number of Existing Federal Wells	3,373	3,373	3,373	3,373	3,373
Projected Number of Abandoned Existing Federal Wells	256	256	256	256	256
Remaining Number of Existing Productive Federal Wells	**3,117**	**3,117**	**3,117**	**3,117**	**3,117**
Projected New Federal Wells					
Number of Projected New Federal Wells	1,823	190	1,664	1,800	1,813
Projected Number of Abandoned New Federal Wells	284	26	259	279	281
Projected Productive New Federal Wells	**1,539**	**164**	**1,405**	**1,521**	**1,532**
Projected Total Productive Federal Wells					
Remaining Number of Existing Productive Federal Wells	3,117	3,117	3,117	3,117	3,117
Projected Productive New Federal Wells	1,539	164	1,405	1,521	1,532
Total Number Productive Federal Wells	**4,656**	**3,281**	**4,522**	**4,638**	**4,649**
Non-federal Well Projections (State and Fee Minerals)					
Existing Productive Non-federal Wells					
Number of Existing Non-federal Wells	1,377	1,377	1,377	1,377	1,377
Projected Number of Abandoned Non-federal Wells	104	104	104	104	104
Remaining Number of Existing Productive Non-federal Wells	**1,273**	**1,273**	**1,273**	**1,273**	**1,273**

Table M-2. Reasonable Foreseeable Development (Continued)

Type of Development	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Projected New Non-federal Wells					
Number of Projected New Non-federal Wells	819	808	819	809	815
Projected Number of Abandoned New Non-federal Wells	128	109	127	126	127
Projected Productive New Non-federal Wells	**691**	**699**	**692**	**683**	**688**
Projected Total Productive Non-Federal Wells					
Remaining Number of Existing Productive Non-Federal Wells	1,273	1,273	1,273	1,273	1,273
Projected Productive New Non-Federal Wells	691	699	692	683	688
Total Number Productive Non-federal Wells	**1,964**	**1,972**	**1,965**	**1,956**	**1,961**
Cumulative Productive Wells					
Total Number Productive Federal Wells	4,656	3,281	4,522	4,638	4,649
Total Number Productive Non-federal Wells	1,964	1,972	1,965	1,956	1,961
Total Productive Wells	**6,620**	**5,253**	**6,487**	**6,594**	**6,610**

Table M-2. Reasonable Foreseeable Development (Continued)

Type of Development	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Mineral Resources - Coal					
Coal Development	There is one producing mine that produced 24.6-million tons in 2001. Coal production at this mine cannot exceed 30-million tons annually.	Same as Alternative A	Same as Alternative A	Same as Alternative A	Same as Alternative A
Mineral Resources - Locatable					
Exploration for locatable minerals	All BLM administered mineral estate, except in areas specifically withdrawn from mineral location, would remain open for prospecting for and development of locatable minerals	Large acreages would be withdrawn from operation under the mining law, limiting opportunities to discover and develop new mineral reserves.	Same as Alternative B, except a smaller percentage of minerals would be withdrawn from operation of the mining laws.	Same as Alternative A. A slight increase of up to two additional notice-level activities would occur per year. Each notice is limited to 5 acres or less.	Same as Alternative A
Fire Management and Ecology					
Management Ignited Prescribed Fire	1,000 acres/year	1,000 acres/year	1,000 acres/year	1,000 acres/year	1,000 acres/year
Fuels Management	75 acres/year	75 acres/year	75 acres/year	75 acres/year	75 acres/year
Fish and Wildlife					
Restore The Water Table of Incised Streams by Using Various Methods Including In-stream Structures	None specified	At least 12 streams may be restored.	At least 8 streams may be restored.	At least 4 streams may be restored.	At least 4 streams may be restored.
Forest and Woodlands					
Silviculture Treatments, Forest Products, and Insect Control Total Disturbed Area for Life of Plan	1,000 acres	600 acres	1,600 acres	3,200 acres	1,600 acres
Invasive Nonnative Plant Species					
Control of Noxious Weeds and Nonnative Plants, Unrelated to Surface Disturbance Projects	Treat 850 acres /year	Treat 850 acres /year	Treat 850 acres /year	Treat 850 acres /year	Treat 850 acres /year
Range Improvement Projects: Assumes 5 percent requires treatment	32 acres/year disturbed = 2 acres/year treated	Same as Alternative A	Same as Alternative A	Same as Alternative A	Same as Alternative A

Table M-2. Reasonable Foreseeable Development (Continued)

Type of Development	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Prescribed Fire: Assumes 10 percent requires BLM treatment	1,000 acres/year disturbed = 100 acres/year treated	Same as Alternative A	Same as Alternative A	Same as Alternative A	Same as Alternative A
Chemical Treatments (Spike): Assumes 0 percent requires BLM treatment	500 acres/year disturbed = 0 acres/year treated	Same as Alternative A	Same as Alternative A	Same as Alternative A	Same as Alternative A
Mechanical Treatments: Assumes 5 percent requires BLM treatment	25 acres/year disturbed = 2 acres/year treated	Same as Alternative A	Same as Alternative A	Same as Alternative A	Same as Alternative A
BLM Road Maintenance: Assumes 10 percent requires BLM treatment	128 acres/year disturbed = 13 acres/year treated	Same as Alternative A	Same as Alternative A	Same as Alternative A	Same as Alternative A
Forests and Woodland	100 acres/year treated	Same as Alternative A	Same as Alternative A	Same as Alternative A	Same as Alternative A
Federal Oil and Gas Well Activities: Assumes 40 percent requires treatment on short-term disturbance and 15 percent requires treatment on long-term disturbance	325 acres short-term 134 acres long-term 459 acres total	47 acres short-term 41 acres long-term 88 acres total	298 acres short-term 131 acres long-term 429 acres total	327 acres short-term 134 acres long-term 461 acres total	Same as Alternative A
Renewable Energy Projects: Assumes 10 percent requires treatment	14 acres/year disturbed = 2 acres/year treated	None	Same as Alternative A	Same as Alternative A	Same as Alternative A
ROW: Assumes 10 percent requires treatment	488 acres/year disturbed = 49 acres/year treated	93 acres/year disturbed = 10 acres/year treated	448 acres/year disturbed = 45 acres/year treated	493 acres/year disturbed = 50 acres/year treated	Same as Alternative A
Lands and Realty					
The demand for disposal of public land will average about 5,000 acres per year.	5,100 acres	5,100 acres	5,291 acres	11,252 acres	11,252 acres

Table M-2. Reasonable Foreseeable Development (Continued)

Type of Development	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Livestock Grazing					
Spring Development – Total Number of Projects	25	25	25	25	25
Reservoir/Pit Development – Total Number of Projects	40	40	40	40	40
Well Development – Total Number of Projects	50	50	50	50	50
Pipeline Development – Total Number of Projects	15	15	15	15	15
Fence Development – Total Number of Projects	90	90	90/	90	90
Reservoir Maintenance Development – Total Number of Projects	20	20	20	20	20

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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX N

Standard Oil and Gas Stipulations

Appendix N
Standard Oil and Gas Stipulations

Multiple Mineral Development Stipulation

Operations will not be approved which, in the opinion of the authorized officer, would unreasonably interfere with the orderly development and/or production from a valid existing mineral lease issued prior to this one for the same lands.

Lease Notice 1

Under Regulation 43 Code of Federal Regulation (CFR) 3101.1 2 and terms of the lease (BLM Form 3100 11), the authorized officer may require reasonable measures to minimize adverse impacts to other resource values, land uses, and users not addressed in lease stipulations at the time operations are proposed. Such reasonable measures may include, but are not limited to, modification of siting or design of facilities, timing of operations, and specification of interim and final reclamation measures, which may require relocating proposed operations up to 200 meters, but not off the leasehold, and prohibiting surface disturbance activities for up to 60 days.

The lands within this lease may include areas not specifically addressed by lease stipulations that may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Possible special areas are identified below. Any surface use or occupancy within such special areas will be strictly controlled or, if absolutely necessary, prohibited. Appropriate modifications to imposed restrictions will be made for the maintenance and operation of producing wells.

1. Slopes in excess of 25 percent.
2. Within 500 feet of surface water and/or riparian areas.
3. Construction with frozen material or during periods when the soil material is saturated or when watershed damage is likely to occur.
4. Within 500 feet of Interstate highways and 200 feet of other existing rights of way (i.e., U.S. and State highways, roads, railroads, pipelines, power lines).
5. Within ¼ mile of occupied dwellings.
6. Material sites.

Guidance

The intent of this notice is to inform interested parties (potential lessees, permittees, operators) that when one or more of the above conditions exist, surface disturbing activities will be prohibited unless or until the permittee or the designated representative and the surface management agency arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation will occur prior to development and become a condition for approval when authorizing the action.

Specific threshold criteria (e.g., 500 feet from water) have been established based upon the best information available. However, geographical areas and time periods of concern must be delineated at the field level (i.e., "surface water and/or riparian areas" may include both intermittent and ephemeral water sources or may be limited to perennial surface water).

The referenced oil and gas leases on these lands are hereby made subject to the stipulation that the exploration or drilling activities will not interfere materially with the use of the area as a materials site/free use permit. At the time operations on the above lands are commenced, notification will be made

to the appropriate agency. The name of the appropriate agency may be obtained from the proper BLM Field Office.

Lease Notice 2

Background

The BLM, by including National Historic Trails (NHTs) within its National Landscape Conservation System, has recognized these trails as national treasures. Our responsibility is to review the strategy for management, protection, and preservation of these trails. The NHTs in Wyoming, which include the Oregon, California, Mormon Pioneer, and Pony Express Trails, as well as the Nez Perce Trail, were designated by Congress through the National Trails System Act (P.L. 90-543; 16 U.S.C. 1241-1251) as amended through P.L. 106-509 dated November 13, 2000. Protection of the NHTs is normally considered under the National Historic Preservation Act (P.L. 89-665; 16 U.S.C. 470 et seq.) as amended through 1992 and the National Trails System Act. Additionally, Executive Order 13195, "Trails for America in the 21st Century," signed January 18, 2001, states in Section 1: "Federal agencies will...protect, connect, promote, and assist trails of all types throughout the United States (U.S.). This will be accomplished by…(b) Protecting the trail corridors associated with national scenic trails and the high priority potential sites and segments of national historic trails to the degrees necessary to ensure that the values for which each trail was established remain intact." Therefore, the BLM will be considering all impacts and intrusions to the NHTs, their associated historic landscapes, and all associated features, such as trail traces, grave sites, historic encampments, inscriptions, natural features frequently commented on by emigrants in journals, letters and diaries, or any other feature contributing to the historic significance of the trails. Additional NHTs will likely be designated amending the National Trails System Act. When these amendments occur, this notice will apply to those newly designated NHTs as well.

Strategy

The BLM will proceed in this objective by conducting a viewshed analysis on either side of the designated centerline of the NHTs in Wyoming, except, at this time, for the Nez Perce Trail, for the purpose of identifying and evaluating potential impacts to the trails, their associated historic landscapes, and their associated historic features. Subject to the viewshed analysis and archaeological inventory, reasonable mitigation measures may be applied. These may include, but are not limited to, modification of siting or design of facilities to camouflage or otherwise hide the proposed operations within the viewshed. Additionally, specification of interim and final reclamation measures may require relocating the proposed operations within the leasehold. Surface disturbing activities will be analyzed in accordance with the National Environmental Policy Act of 1969 (P.L. 91-190; 42 U.S. Code (U.S.C.) 4321-4347) as amended through P.L. 94-52, July 3, 1975 and P.L. 94-83, August 9, 1975, and the National Historic Preservation Act, supra, to determine if any design, siting, timing, or reclamation requirements are necessary). This strategy is necessary until the BLM determines that, based on the results of the completed viewshed analysis and archaeological inventory, the existing land use plans (Resource Management Plans) have to be amended.

The use of this lease notice is a predecisional action, necessary until final decisions regarding surface disturbing restrictions are made. Final decisions regarding surface disturbing restrictions will take place with full public disclosure and public involvement over the next several years if BLM determines that it is necessary to amend existing land use plans.

Guidance

The intent of this notice is to inform interested parties (potential lessees, permittees, operators) that when any oil and gas lease contains remnants of NHTs, or is located within the viewshed of a NHTs' designated centerline, surface disturbing activities will require the lessee, permittee, operator or, their designated representative, and the surface management agency to arrive at an acceptable plan for

mitigation of anticipated impacts. This negotiation will occur prior to development and become a condition for approval when authorizing the action.

Attachment to Each Lease

Notice to Lessee

Provisions of the Mineral Leasing Act (MLA) of 1920, as amended by the Federal Coal Leasing Amendments Act of 1976, affect an entity's qualifications to obtain an oil and gas lease. Section 2(a)(2)(A) of the MLA, 30 U.S.C. 201 (a)(2)(A), requires that any entity that holds and has held a Federal coal lease for 10 years beginning on or after August 4, 1976, and who is not producing coal in commercial quantities from each such lease, cannot qualify for the issuance of any other lease granted under the MLA. Compliance by coal lessees with Section 2(a)(2)(A) is explained in 43 CFR 3472.

In accordance with the terms of this oil and gas lease, with respect to compliance by the initial lessee with qualifications concerning Federal coal lease holdings, all assignees and transferees are hereby notified that this oil and gas lease is subject to cancellation if: (1) the initial lessee as assignor or as transferor has falsely certified compliance with Section 2(a)(2)(A), or (2) because of a denial or disapproval by a State Office of a pending coal action, i.e., arms-length assignment, relinquishment, or logical mining unit, the initial lessee as assignor or as transferor is no longer in compliance with Section 2(a)(2)(A). The assignee, sublessee or transferee does not qualify as a bona fide purchaser and, thus, has no rights to bona fide purchaser protection in the event of cancellation of this lease due to noncompliance with Section 2(a)(2)(A).

Information regarding assignor, sublessor or transferor compliance with Section 2(a)(2)(A) is contained in the lease case file as well as in other Bureau of Land Management records available through the State Office issuing this lease.

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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
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APPENDIX O

Recreation Management Matrices

Appendix O
Recreation Management Matrices

Seminoe-Alcova Back Country Byway
Special Recreation Management Area (SRMA)

Primary Market Strategy	Market
Community and Destination	Visitors and Local Residents

Niche
Driving for Pleasure, Environmental Education

Recreation Management Objective
Manage this SRMA to provide opportunities for visitors to engage in targeted activities with a focus on experiences and benefits indicated below.

Targeted Outcomes

Primary Activities	Experiences	Benefits
Driving/Touring for Pleasure Viewing Wildlife/Natural Scenery	Enjoying activities in a natural scenery Enjoying natural scenery and wildlife Engaging in preferred activities with family and friends	**Personal:** • Nature/aesthetic appreciation • Positive change in mood and emotion • Social bonding/cohesion/cooperation • Identification with a special place **Community:** • Improved perceived quality of life • Family bonding/better family life • Improved image of the area and its recreational opportunities **Environmental:** • Creates sense of "ownership" and stewardship of the area • Provides natural habitat and open space **Economic:** • Contribution to Recreation and Tourism Sector of the local economy • Retains recreation spending in local area • Increased attractiveness of Wyoming as a place to relocate

Prescribed Setting Character

Physical	Social	Administrative
Remoteness: Front Country **Naturalness**: Middle Country (natural landscape except primitive roads) **Facilities**: Front Country (maintained road, interpretive signage, campgrounds)	**Contacts**: Middle Country (7-14 encounters/day, 15-29 en-route) **Group Size**: Middle Country (7-14 people per group) **Evidence of Use**: Middle Country (vegetation worn near camp sites)	**Mechanized Use**: Front Country (Two-wheel drive vehicles predominate, but four-wheel drive, ATV, and nonmotorized travel also present.) **Visitor Services**: Middle Country **Management controls**: Middle Country (Information materials available at developed recreation sites. Agency personnel occasionally onsite, occasional regulatory signing, random enforcement.)

Implementation Strategy/Actions

Administrative	Encourage and develop cooperative relationships with volunteer groups, land owners, and other land management agencies to facilitate responsible recreational use of the area. Area cooperatively managed by Casper and Rawlins field offices (FOs). Byway on county roads.
Management	Existing facilities include directional signing. Improvements will be preceded by formal site plans and will adhere to guidelines developed for the area.
Marketing	Directional signing and interpretation. Develop brochures for the area.
Monitoring	Routine monitoring of facilities, periodic visitor contact to assess achievement of management objectives.

South Bighorns/Red Wall Back Country Byway
Special Recreation Management Area (SRMA)

Primary Market Strategy	Market
Community and Destination	Visitors and Local Residents

Niche

Driving for Pleasure, Environmental Education

Recreation Management Objective

Manage this SRMA to provide opportunities for visitors to engage in targeted activities with a focus on experiences and benefits indicated below.

Targeted Outcomes

Primary Activities	Experiences	Benefits
Driving/Touring for Pleasure Viewing Wildlife/Natural Scenery Access Route to Major Recreation Areas	Enjoying activities in a natural scenery Enjoying natural scenery and wildlife Engaging in preferred activities with family and friends	**Personal:** • Nature/aesthetic appreciation • Positive change in mood and emotion • Social bonding/cohesion/cooperation • Identification with a special place **Community:** • Improved perceived quality of life • Family bonding/better family life • Improved image of the area and its recreational opportunities **Environmental:** • Creates sense of "ownership" and stewardship of the area • Provides natural habitat and open space **Economic:** • Contribution to Recreation and Tourism Sector of the local economy • Retains recreation spending in local area • Increased attractiveness of Wyoming as a place to relocate

Prescribed Setting Character

Physical	Social	Administrative
Remoteness: Front Country **Naturalness**: Middle Country (natural landscape except primitive roads) **Facilities**: Front Country (maintained road, interpretive signage, campgrounds)	**Contacts**: Middle Country (7-14 encounters/day, 15-29 en-route) **Group Size**: Middle Country (7-14 people per group) **Evidence of Use**: Middle Country (vegetation worn near camp sites)	**Mechanized Use**: Front Country (Two-wheel drive vehicles predominate, but four-wheel drive, ATV and non-motorized travel also present.) **Visitor Services**: Middle Country **Management controls**: Middle Country (Information materials available at developed recreation sites. Agency personnel occasionally onsite, occasional regulatory signing, random enforcement.)

Implementation Strategy/Actions

Administrative	Encourage and develop cooperative relationships with volunteer groups, land owners, and other land management agencies to facilitate responsible recreational use of the area. Byway on county roads.
Management	Existing facilities include directional signing and Interpretation. Improvements will be preceded by formal site plans and will adhere to guidelines developed for the area.
Marketing	Directional signing and interpretation. Develop brochures for the area.
Monitoring	Routine monitoring of facilities, periodic visitor contact to assess achievement of management objectives.

Goldeneye Wildlife and Recreation Area
Special Recreation Management Area (SRMA)

Primary Market Strategy	Market
Community	Local Residents

Niche

Fishing

Recreation Management Objective

Manage this SRMA to provide opportunities for visitors to engage in targeted activities with a focus on experiences and benefits indicated below. Maintain Setting Character as outlined below.

Targeted Outcomes

Primary Activities	Experiences	Benefits
Fishing Bird Hunting	Enjoying activities in a natural setting Enjoying natural scenery and wildlife Engaging in preferred activities with family and friends Testing and improving outdoor skills	**Personal:** • Nature/aesthetic appreciation • Positive change in mood and emotion • Social bonding/cohesion/cooperation • Identification with a special place **Community:** • Improved perceived quality of life • Family bonding/better family life • Improved image of the area and its recreational opportunities • **Environmental:** • Creates sense of "ownership" and stewardship of the area • Provides natural habitat and open space **Economic:** • Retains recreation spending in local area • Increased attractiveness of Wyoming as a place to relocate

Prescribed Setting Character

Physical	Social	Administrative
Remoteness: Front Country (on or near improved county roads) **Naturalness:** Middle Country (natural appearing landscape except primitive roads) **Facilities:** Front Country (Improved, yet modest facilities such as restrooms, trails, and signs.)	**Contacts:** Middle Country (7-14 encounters/day, 15-29 en-route) **Group Size:** Middle Country (7-12 people per group) **Evidence of Use:** Front Country (Some well-worn soil and vegetation. Gravel surface roads and parking. Some evidence of litter.)	**Visitor Services:** Middle Country (Area brochure, area personnel occasionally present to provide onsite assistance.) **Management Controls:** Middle Country (Occasional regulatory signing, Motorized use limitations, random enforcement presence.) **Mechanized Use:** Front Country (Two-wheel drive vehicle accessible, nonmotorized travel away from parking areas, roads.)

Implementation Strategy/Actions

Administrative	Encourage and develop cooperative relationships with volunteer groups to facilitate responsible recreational use of the area.
Management	Existing facilities to provide for visitor parking and sanitation. Improvements will be preceded project planning and will adhere to guidelines developed for the area.
Marketing	Marketing limited to word of mouth, brochure.
Monitoring	Routine monitoring of physical facilities, periodic visitor contact to assess achievement of management objectives.

Middle Fork
Special Recreation Management Area (SRMA)

Primary Market Strategy	Market
Community	Visitors and Local Residents

Niche

Hunting, Camping, Fishing, Driving for Pleasure

Recreation Management Objective

Manage this SRMA to provide opportunities for visitors to engage in targeted activities with a focus on experiences and benefits indicated below. Maintain Setting Character as outlined below.

Targeted Outcomes

Primary Activities	Experiences	Benefits
Driving/Touring for Pleasure Camping Hiking Hunting Fishing Viewing Wildlife/Natural Scenery	Enjoying activities in a natural scenery Enjoying natural scenery and wildlife Engaging in preferred activities with family and friends Testing and improving outdoor skills	**Personal:** • Nature/aesthetic appreciation • Positive change in mood and emotion • Social bonding/cohesion/cooperation • Identification with a special place **Community:** • Improved perceived quality of life • Family bonding/better family life • Improved image of the area and its recreational opportunities **Environmental:** • Creates sense of ownership and stewardship of the area • Provides natural habitat and open space **Economic:** • Contribution to Recreation and Tourism Sector of the local economy • Retains recreation spending in local area • Increased attractiveness of Wyoming as a place to relocate

Prescribed Setting Character

Physical	Social	Administrative
Remoteness: Middle Country (on and near four-wheel drive roads) **Naturalness:** Middle Country (natural landscape except primitive roads) **Facilities:** Front Country (maintained road, interpretive signage, campgrounds)	**Contacts:** Middle Country (7-14 encounters/day, 15-29 en-route) **Group Size:** Back Country (4-6 people per group) **Evidence of Use:** Middle Country (vegetation worn near camp sites)	**Mechanized Use:** Middle Country (four-wheel drive vehicles predominate, ATV and nonmotorized travel) **Visitor Services:** Middle Country **Management Controls:** Middle Country (Information materials available at developed recreation sites. Agency personnel occasionally onsite, occasional regulatory signing, random enforcement.)

Implementation Strategy/Actions

Administrative	Encourage and develop cooperative relationships with volunteer groups, land owners, and other land management agencies to facilitate responsible recreational use of the area. Area cooperatively managed by Buffalo, Worland, and Casper FOs.
Management	Existing facilities include campgrounds and access road system. Improvements will be preceded by project plans and will adhere to guidelines developed for the area. Off-highway vehicle (OHV) – motor vehicles limited to designated roads and trails. Visual Resource Management (VRM) Class II predominately in the canyon.
Marketing	Directional signing and interpretation. Develop brochures for the area.
Monitoring	Routine monitoring of facilities, visitor information collected at campgrounds, periodic visitor surveys to assess achievement of management objectives. OHV a primary focus of monitoring.

Muddy Mountain Environmental Education Area
Special Recreation Management Area (SMRA)

Primary Market Strategy	Market
Community	Primarily Local Residents

Niche

Environmental Education, Camping, picnicking, hiking, snowmobiling and driving for pleasure

Recreation Management Objectives

At publication of this RMP manage the Muddy Mountain EEA SRMA to provide opportunities for visitors to engage in targeted activities to achieve experiences & benefits indicated below. Maintain Setting Character as outlined below.

Targeted Outcomes

Primary Activities	Experiences	Benefits
Environmental Education Picnicking Camping Driving for Pleasure Snowmobiling	Being with friends & family Relaxing physically Enjoying scenery & natural setting Learning about Central Rocky Mountain Forest & Riparian Ecosystems Enjoying leisure activities	**Personal**: • Nature/aesthetic appreciation • Positive change in mood and emotion • Social bonding/cohesion/cooperation • Identification with a special place **Community**: • Improved perceived quality of life • Family bonding/better family life • Improved image of the area and its recreational opportunities • Improved image of land management agencies **Environmental**: • Creates sense of "ownership" and stewardship of the area • Better preservation of forest & riparian environment **Economic**: • Contribution to Recreation & Tourism Sector of the local economy • Retains recreation spending in local area • Increased attractiveness of Wyoming as a place to live

PRESCRIBED SETTING CHARACTER

Physical	Social	Administrative
Remoteness: Front Country (near improved roads) **Naturalness**: Middle Country (natural appearing landscapes) **Facilities**: Middle Country (Developed recreation facilities designed to facilitate access & use of the area)	**Contacts**: Middle/Front Country (7-14 encounters/day15-29encounters on route) **Group Size**: Back Country (4-6 people per group) **Evidence of Use**: Front Country (Vehicle tracks common, some noise & litter, vegetation commonly worn around public facilities)	**Mechanized Use**: Front Country (Two & four wheel drive vehicles, ATV & non-motorized/mechanized travel) **Visitor Services**: Front Country (Regulatory/information signs, OHV limitations) **Management**: Front Country (Information materials available at developed sites. Agency personnel occasionally onsite, occasional regulatory signing, periodic enforcement presence)

Implementation Strategy/Actions

Administrative	Maintain facilities as they currently exist. The EEA will be managed according to the Muddy Mountain Recreation Area Management Plan (RAMP), completed in 2000. Easements and land exchanges would be negotiated to improve access to the north rim and Corral Creek areas. Opening and closing dates to Muddy Mountain will be based on snow conditions. Dates are generally around June 1st and November 15th. SRP will be evaluated for recreation/outdoor education and for commercial activities for qualified hunting guides only. On developed recreation sites, unless specifically authorized no person shall discharge firearms, other weapons, projectiles or fireworks. The EEA would be managed as VRM Class II; OHV – Motor vehicles limited to designated roads & trails.
Management	Campground and day use fees are charged. Current facilities include two campgrounds, a non-motorized trail system that includes a Natural Recreation Trail (universally accessible and interpreted), motorized trail system for snowmobiles and ATVs, two trail heads, parking areas, vault toilets, potable water well, trash collection and campground host site with RV dump. The development of new facilities will be evaluated as demand dictates.
Marketing	Develop Muddy Mountain brochures, support active volunteer programs and develop new partnerships (e.g., National Public Lands Day and National Trails Day events and volunteer projects for local groups).
Monitoring	Routine monitoring of physical facilities, visitor number collections will continue to include registration forms, periodic visitor surveys to assess achievement of management objectives.

National Historic Trails (NHTs)
Special Recreation Management Area (SRMA)
(Includes Oregon, California, Pony Express, and Mormon Pioneer NHTs)

Primary Market Strategy	Market
Destination and Community	Local Residents and Visitors

Niche

Historic Preservation, Education/Interpretation

Recreation Management Objectives

Manage the National Historic Trails (NHTs) SRMA to provide opportunities for visitors to engage in targeted activities in preferred settings in order to achieve experiences and benefits indicated below. Preserve the physical remains of the historic trails and where possible the physical setting in which the trails are located.

TARGETED (OUTCOMES) ACTIVITIES, EXPERIENCES, And BENEFITS

Activities	Experiences	Benefits
Driving/Touring for Pleasure Viewing Historic Sites Learning About the History of the Area Living History Heritage Education and Tourism	Viewing historic trail remains in a natural setting Studying and learning about the history of the area Engaging in preferred activities with family and friends Feeling good about the way our cultural heritage is being protected and interpreted	**Personal:** • Nature/aesthetic/historic appreciation • Greater respect for cultural heritage • Social bonding/cohesion/cooperation • Identification with a special place • Better understanding of pioneer's contribution to our way of life **Community:** • Improved perceived quality of life • Improved image of the area and its history **Environmental:** • Creates sense of ownership and stewardship of cultural/historical resources of the area • Greater protection of the area's cultural/historical resources **Economic:** • Contribution to Recreation and Tourism Sector of the local economy • Retains recreation spending in local area • Increased attractiveness of Wyoming as a place to live

Prescribed Setting Character

Physical	Social	Administrative
The setting prescriptions are generalized and apply broadly to the entire Historic Trail Corridor. The Physical, Social, and Administrative Settings vary from Middle Country to Rural. Middle Country Settings are found west of Casper in places like Ryan (Prospect) Hill. Rural Settings are found nearer cities and towns.		

Implementation Strategy/Actions

Administrative	Encourage and develop cooperative partnerships with volunteer groups, land owners, and other land management agencies to facilitate management and development ownership/stewardship. Special Recreation Permits (SRPs) will be allowed for commercial, noncommercial, and competitive events on a case-by-case basis.
Management	Maintain setting for contributing trail segments. Developments such as access/interpretation would be authorized as needed. Revise statewide Historic Trails Management Plan. Pursue land acquisitions along the trail corridor. Manage Trail corridor as VRM Class II in Foreground - Middleground Zone. Controlled surface use (CSU) ¼ mile either side of trail remains or visual horizon, whichever is less for noncontributing setting; CSU to 3 miles from trail for contributing setting (See 7000 Special Designations for additional detail).
Marketing	Information/directional signs and interpretation along the corridor as appropriate. Develop brochures for the area and upgrade the internet site that describes the area. Casper Trails Center leads Interpretation effort.
Monitoring	Monitor condition of trail segments and associated sites and settings as appropriate. Monitor visitor use registration forms and periodic visitor surveys to assess achievement of management objectives.

North Platte River
Special Recreation Management Area (SRMA)

Primary Market Strategy	Market
Destination and Community	Local Residents and Visitors

Niche

River-based recreation, fishing, drift boating, river floating

Recreation Management Objectives

At publication of this RMP manage the North Platte river SRMA to provide opportunities for visitors to engage in targeted activities to achieve experiences and benefits indicated below. Maintain Setting Character as outlined below.

Targeted Outcomes

Primary Activities	Experiences	Benefits
Bank Fishing Boat Launching and Take-out Drift Boat Fishing Viewing Wildlife and Natural Scenery Rafting and Canoeing	Being with friends and family Relaxing physically Enjoying scenery and natural setting Improving outdoor-related skills in natural environment Enjoying leisure activities in natural setting	**Personal:** • Nature/aesthetic appreciation • Positive change in mood and emotion • Social bonding/cohesion/cooperation • Identification with a special place **Community:** • Improved perceived quality of life • Family bonding/better family life • Improved image of the area and its recreational opportunities • Improved image of land management agencies **Environmental:** • Creates sense of "ownership" and stewardship of the area • Better preservation of riparian environment **Economic:** • Contribution to Recreation and Tourism Sector of the local economy • Retains recreation spending in local area • Increased attractiveness of Wyoming as a place to relocate and live

Prescribed Setting Character

Physical	Social	Administrative
Remoteness: rural (near highways) **Naturalness:** Middle/Front Country (natural appearing and partially modified landscapes) **Facilities:** Middle/Front Country (Developed recreation facilities designed to facilitate access, protection and use of the area)	**Contacts:** Middle/Front Country (7-14 encounters/30 encounters on route) **Group Size:** Back Country (4-6 people per group) **Evidence of Use:** Front Country (Vehicle tracks common, some noise and litter, vegetation commonly worn around public facilities)	**Mechanized Use:** Front Country (Two- and four-wheel drive vehicles, ATV and nonmotorized/mechanized travel) **Visitor Services:** Front Country (Regulatory/information signs, OHV limitations) **Management Controls:** Middle Country (Information materials available at developed sites. Agency personnel occasionally onsite, occasional regulatory signing, periodic enforcement presence)

Implementation Strategy/Actions

Administrative	Maintain or upgrade existing facilities. Focus on public access, boat launch, parking, resource protection, sanitation. Support land acquisition along the river through purchase or exchange.
Management	Seek cooperative relationships with local groups and other agencies to facilitate management. Occasional visitor contact and law enforcement.
Marketing	Word of mouth, brochures, interpretative signing, directional signing.
Monitoring	Routine monitoring of physical facilities, visitor number collections will continue to include registration forms, periodic visitor surveys to assess achievement of management objectives.

Poison Spider OHV Park
Special Recreation Management Area (SRMA)

Primary Market Strategy	Market
Community	Local Residents

Niche
Off-Road ATV and Motorcycle Riding

Recreation Management Objective
Manage this SRMA to provide a venue for unlimited off-road ATV and motorcycle riding, activities that are difficult to accommodate and inappropriate for most areas. Focus on experiences and benefits indicated below.

Targeted Outcomes

Primary Activities	Experiences	Benefits
Off-Road ATV Riding Off-Road Motorcycle Riding	Enjoying preferred activities in an appropriate setting Testing and improving riding skills	**Personal:** • Positive change in mood and emotion • Social bonding/cohesion/cooperation **Community:** • Improved perceived quality of life • Improved image of the area and its recreational opportunities • creates a positive image of off-road motorized activities **Environmental:** • Creates sense of "ownership" and stewardship of the area • An appropriate venue for an activity that is difficult to accommodate **Economic:** • Retains recreation spending in local area • Increased attractiveness of Wyoming as a place to live

Prescribed Setting Character

Physical	Social	Administrative
Remoteness: Rural (on or near highways) **Naturalness**: Rural (natural landscape substantially modified) **Facilities**: Rural (modern facilities to accommodate visitors may be present)	**Group Size**: Rural (up to 25 - 50 people per group) **Contacts**: Rural (people seem to be everywhere) **Evidence of Use**: Rural (May have paved roads and parking areas. Noise, litter, and facility impacts are pervasive.)	**Visitor Services**: Front Country, (Information signs and materials describe areas and activities. Agency personnel are periodically available.) **Management Controls**: Front Country (Rules clearly posted, may be some use limitations. Periodic enforcement presence.) **Mechanized Use**: Rural (Accessible to highway and auto and truck traffic. Four-wheel drive vehicles predominate, ATV and motorcycle travel)

Implementation Strategy/Actions

Administrative	Encourage and develop cooperative relationships with volunteer groups, land owners, and other land management agencies to facilitate responsible recreational use of the area.
Management	Existing facilities include directional signing. Improvements geared toward facilitating access and accommodating users. Additional preceded by project plan and will adhere to guidelines developed for the area.
Marketing	Word-of-mouth. Directional signing.
Monitoring	Routine monitoring of area and facilities, periodic visitor contact and monitoring to assess achievement of management objectives.

Extensive Recreation Management Area

Those areas not identified in the planning area as Special Recreation Management Areas (SRMAs) are identified as an Extensive Recreation Management Area (ERMA). ERMA objectives describe custodial outcomes for the purpose of "taking care" of identified stewardship needs associated with recreation-tourism activity participation. Casper ERMA objectives are:

1. Visitor Health and Safety – Ensure that participants in dispersed recreational activities have a low potential for serious accidents (less than two accidents per year that require hospitalization) due to human-created conditions and no (zero) exposure to hazardous health conditions.
2. Use and User Conflicts – Limit incidents of conflict that impede oil and gas production (as determined by BLM Natural Resource Specialists) to 3 or less per year by increasing the understanding of participants in traditional dispersed recreational activities about oil and gas production and the phasing of development.
3. Resource Protection – Create an increased awareness, understanding and a sense of stewardship in recreational activity participants so their conduct safeguards natural resource values within ACECs and overall land health (as defined by ACEC objectives or Land Health Standards).

Implementation actions for the RMP include:

- Management – Custodial recreation management actions only.
- Marketing and Interpretation – Mitigate conflicts through visitor outreach efforts.
- Monitoring – BLM staff will monitor conflicts with other uses (i.e., oil and gas production, grazing, ACEC management and land health), and private lands.
- Administration – Mitigate conflicts directly by way of recreation use restrictions, realignments, signage, and closures.

Travel Management Area (TMA) delineation addresses other modes of travel not covered by OHV area designations (43 CFR 8342.1). The planning area currently allows muscle-powered (i.e., foot, ski, horse, stock) travel cross-country year-round. Except in designated areas, mechanized (wheeled conveyance) is limited to existing roads and trails only. The BLM is currently preparing nationwide TMA guidance which will be incorporated in the Final EIS if available.

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CASPER DRAFT
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APPENDIX P

Area of Critical Environmental Concern Nomination Process

Appendix P
Area of Critical Environmental Concern Nomination Process

The Area of Critical Environmental Concern (ACEC) designation is an administrative designation used by the Bureau of Land Management (BLM) that is accomplished through the land use planning process. It is unique to the BLM in that no other agency uses this form of designation. The Federal Land Policy and Management Act (FLPMA), states that the BLM will give priority to the designation and protection of ACECs in the development and revision of land use plans.

BLM regulations (43 Code of Federal Regulations [CFR] part 1610) define ACECs as areas "within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." Private lands and lands administered by other agencies are not included in the boundaries of ACECs. ACECs differ from other special management designations, such as wilderness study areas, in that designation by itself does not automatically prohibit or restrict other uses in the area (with the exception that a mining plan of operation is required for any proposed mining activity within a designated ACEC). To be designated, special management beyond standard provisions established by the plan must be required to protect relevant and important values.

Several steps are required to identify and evaluate ACECs. These steps include (1) the nomination of areas that may meet the relevance and importance criteria (described below), (2) evaluation of the nominated areas to determine if they meet the criteria, and (3) consideration of the potential ACECs as management scenarios analyzed in the Draft RMP/EIS. When released, the Draft RMP/EIS contains recommendations proposing potential ACECs for designation; public comment is requested. Public comments are reviewed and considered and adjustments are made as necessary before the proposed RMP/Final EIS is released. Designation of ACECs is then incorporated in the Record of Decision (ROD) approving the RMP. Figure P-1 illustrates the ACEC process.

"Relevance" and "Importance" are defined as follows:

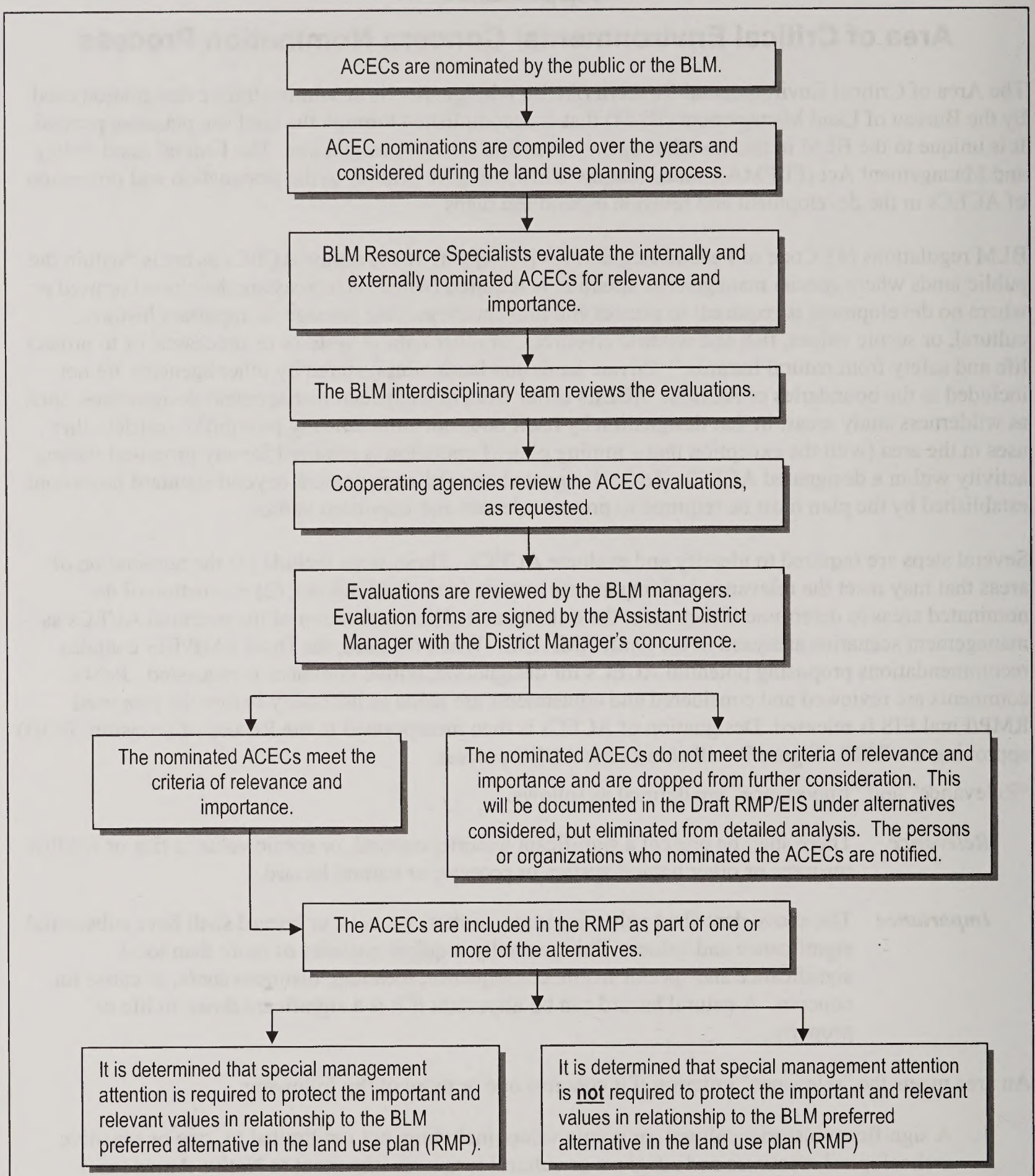
Relevance There shall be present a significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or natural hazard.

Importance The above described value, resource, system, process, or hazard shall have substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to life or property.

An area meets the "relevance" criterion if it contains one or more of the following:

1. A significant historic, cultural, or scenic value (including, but not limited to, rare or sensitive archeological resources and religious or cultural resources important to Native Americans)
2. A fish and wildlife resource (including, but not limited to, habitat for endangered, sensitive, or threatened species, or a habitat essential for maintaining species diversity)

Figure P-1. The ACEC Process



Source: BLM 2003

ACEC	Area of Critical Environmental Concern
BLM	Bureau of Land Management
EIS	Environmental Impact Statement
RMP	Resource Management Plan

3. A natural process or system (including, but not limited to, endangered, nonsensitive, or threatened plant species; rare, endemic, or relic plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features)
4. Natural hazards (including, but not limited to, areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the resource management planning process that it has become part of a natural process.

An area meets the "importance" criterion if it further meets one or more of the following:

1. Has more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource
2. Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change
3. Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of the FLPMA
4. Has qualities that warrant highlighting to satisfy public or management concerns about safety and public welfare
5. Poses a significant threat to human life and safety or to property (BLM 2005).

Summary

The following 23 proposed ACECs were evaluated as part of the land use planning process:

- All big game crucial winter range areas
- All sage-grouse lek complexes
- Black-tailed and white-tailed prairie dog complexes encompassing more than 3,000 acres
- Black-tailed prairie dog complexes
- Alcova Fossil Area
- Bates Hole – Shirley Rim
- Casper Sand Dunes Jackson Canyon
- Cedar Ridge Traditional Cultural Property
- Hartville Uplift
- Jackson Canyon
- Laramie Range Foothills
- Little Medicine Bow Falls
- Muddy Mountain Environmental Education Area
- North Platte River
- Oregon/Mormon Pioneer/California/Pony Express National Historic Trail system
- Rattlesnake Hills
- Rawhide Buttes
- Salt Creek Hazardous
- South Fork Powder River
- South Bighorns/Red Wall
- Table Mountain Wildlife Unit
- Teapot Dome - Naval Petroleum Reserve No. 3
- Upper Antelope Creek.

These areas included existing ACECs, nominations received from the public as part of the scoping process, and areas nominated or proposed for expansion by BLM staff specialists. The 23 nominated areas were evaluated using the relevance and importance criteria described in this appendix. Seven of the nominations met both the relevance and importance criteria and are analyzed within the Special Designations section of the Draft RMP/EIS. These seven potential ACECs also are listed in Table P-1. Table P-2 lists the 16 nominations that were considered and evaluated, but failed to meet both the relevance and importance criteria. Two of the nominated areas not meeting the relevance and importance criteria are being carried forward for additional analysis as Special Management Areas (SMAs).

Additional information describing the nomination and evaluation process and the results of the assessment are contained in a January 2004 report prepared by the BLM Casper Field Office.

Table P-1. Existing and Proposed ACECs and SMAs in the Casper Planning Area

Area	Existing/Proposed Designation	Total Surface Area (Acres)	Value(s) of Concern
Existing ACECs			
Jackson Canyon	ACEC	14,025	Bald eagle winter communal night roosts and scenic, cultural, and recreational values
Salt Creek Hazardous	ACEC	0 to 235,325	Hazards associated with human activity in the area
Proposed ACECs and SMAs			
Alcova Fossil	ACEC/SMA	0 to 7,073	Rare pterodactyl trackways and additional dinosaur fossils from two geologic periods
Bates Hole-Shirley Rim	SMA	0 to 423,965	Sensitive watersheds, soils, and wildlife habitat
Black-tailed prairie dog complex	ACEC	0 to 22,937	Protection of a keystone prairie species, the U.S. Fish and Wildlife Service found that the protection of black-tailed prairie dogs is warranted
Cedar Ridge traditional cultural property	ACEC/SMA	0 to 37,919	Prehistoric and historic cultural resources, including a traditional ceremonial site used by the Eastern Shoshone and other tribal groups
North Platte River	ACEC	2,990 to 85,392	High recreational and scenic values
Salt Creek Hazardous	SMA	0 to 90,931	Oil and gas development potential
Sandhills	SMA	0 to 17,601	A variety of natural sand dune communities and sensitive soils
South Bighorns/Red Wall	ACEC/SMA	0 to 372,872	Crucial wildlife habitats, cultural resources, intact vegetation communities, and outstanding scenery
Wind River	SMA	0 to 539,900	Oil and gas development potential

ACEC Areas of Critical Environmental Concern
SMA Special Management Area

Table P-2. ACEC Nominations in the Casper Planning Area Dropped from Further Consideration

Nomination	Reason Nomination Was Dropped from Further Consideration
All Big Game Crucial Winter Range Areas	Did not meet the relevance criteria for fish and wildlife resource within public lands given scattered public land ownership
All Sage-Grouse Lek Complexes	Did not meet the relevance criteria for fish and wildlife resource within public lands given scattered public land ownership
Bates Hole – Shirley Rim	Met the importance criteria for sensitive qualities, but did not meet the relevance criteria (the area is, however, being carried forward for consideration as a Special Management Area).
Black-tailed and white-tailed prairie dog complexes encompassing more than 3,000 acres	Did not meet the relevance criteria for fish and wildlife resource within public lands given scattered public land ownership
Casper Sand Dunes Jackson Canyon	Met the importance criteria for fragile qualities but did not meet the relevance criteria (the area is, however, being carried forward for consideration as the Sand Hills Special Management Area).
Hartville Uplift	Did not meet the relevance or importance criteria
Laramie Range Foothills	Did not meet the relevance or importance criteria
Little Medicine Bow Falls	Did not meet the relevance or importance criteria for more than local significance
Muddy Mountain Environmental Education Area	Met the importance criteria as exemplary, but did not meet the relevance criteria
Oregon/Mormon Pioneer/California/Pony Express National Historic Trail System	Met the importance criteria for more than local significance, but did not meet the relevance within public lands given scattered public land ownership
Rattlesnake Hills	Did not meet the relevance or importance criteria
Rawhide Buttes	Did not meet the relevance or importance criteria
South Fork Powder River	Did not meet the relevance and importance criteria given the broad nature of the nomination; the portion within the South Bighorns/Red Wall nomination was evaluated along with that nomination and is being carried forward for consideration as a Special Management Area
Table Mountain Wildlife Unit	Met the relevance for fish and wildlife resource and a natural process, but did not meet the importance criteria of being more than locally significant
Teapot Dome – Naval Petroleum Reserve No. 3	The U.S. Department of Energy, not the BLM, administers this area; the nomination is outside the scope of the Casper RMP revision
Upper Antelope Creek	Met the relevance criteria for a significant historic, cultural, or scenic value and fish and wildlife resource, but did not meet the importance criteria

Reference

BLM (Bureau of Land Management). 2003. The ACEC Process Flow Diagram. BLM. Personal communication (e-mail) between Linda Slone (BLM) and Laura Ziemke (Science Applications International Corporation) on November 6, 2003.

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APPENDIX Q

Mineral Development Potential

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Appendix Q
Mineral Development Potential

Table Q-1. ALTERNATIVE A - LEASABLE MINERALS AND RENEWABLE ENERGY
Conventional Oil and Gas Development Potential

Description	ALTERNATIVE A LEASABLE MINERALS AND RENEWABLE ENERGY						
	Conventional Oil and Gas Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
No Leasing							
BLM Closures							
T. 31 N., R. 83 W Portions of Section 25 and 26 T. 39 N., R. 80 W. Portions of Section 20 and 28 T. 40 N., R. 77 W. Portions of Section 15 and 22 Portions of the South Bighorns/Red Wall	14,266	0	0	7,536	14,032	563	22,132
Other Agency Closures							
Camp Guernsey (Military)	0	0	0	0	5,620	0	5,620
Fort Laramie National Historic Site (NPS)	0	0	0	0	792	0	792
Naval Petroleum Reserve No. 3 (DOE)	0	733	0	8,591	0	0	9,324
No Surface Occupancy (NSO)							
NSO within ¼ mile of North Platte River	3,488	0	231	2,313	11,675	1,067	15,286
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	3,793	0	3,793
NSO within Bald Eagle Roosts	14,054	0	0	15,975	21,315	0	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	790	1,705	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	2,532	15,935	2,212	20,679
NSO Pterodactyl Tracks withdrawal area	1,613	0	0	0	1,613	0	1,613
NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	0	3,464	45,286	0	48,750
NSO on sensitive soils and fragile watersheds (JW this is the Converse County Stip file)	13,435	0	326	66	40,984	4,942	46,318
VRM Class II	109,827	0	8,400	4,944	287,844	64,779	365,967
Special Designations and Other Management Areas							
NSO within Jackson Canyon ACEC	3,938	0	0	0	11,104	0	11,104
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	2,517	4,213	36,265	35,761	1,529	80,285
Muddy Mountain Environmental Education Area	1,437	0	0	0	1,212	0	1,212
Table Mountain Withdrawal	2,018	0	0	0	2,018	0	2,018

Table Q-2. ALTERNATIVE A - LEASABLE MINERALS AND RENEWABLE ENERGY
Coalbed Natural Gas Development Potential

Description	ALTERNATIVE A LEASABLE MINERALS AND RENEWABLE ENERGY						
	CBNG Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
No Leasing							
BLM Closures							
T. 31 N., R. 83 W: Portions of Section 25 and 26 T. 39 N., R. 80 W. Portions of Section 20 and 28 T. 40 N., R. 77 W. Portions of Section 15 and 22 Portions of the South Bighorns/Red Wall	14,266	0	0	0	195	21,938	22,133
Other Agency Closures							
Camp Guernsey (Military)	0	0	0	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS)	0	0	0	0	0	792	792
Naval Petroleum Reserve No. 3 (DOE)	0	0	0	0	0	9,324	9,324
No Surface Occupancy (NSO)							
NSO within ¼ mile of North Platte River	3,488	0	0	0	466	14,820	15,286
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	0	0	8,804	28,486	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	0	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	0	1,114	19,565	20,679
NSO Pterodactyl Tracks withdrawal area	1,613	0	0	0	0	1,613	1,613
NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	0	0	0	48,750	48,750
NSO on sensitive soils and fragile watersheds (JW this is the Converse County Stip file)	13,435	0	0	0	324	45,993	46,317
VRM Class II	109,827	0	0	0	3,880	362,087	365,967
Special Designations and Other Management Areas							
NSO within Jackson Canyon ACEC	3,938	0	0	0	0	0	0
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	0	1,773	10,194	11,881	56,339	80,387
Muddy Mountain Environmental Education Area	1,437	0	0	0	0	1,212	1,212
Table Mountain Withdrawal	2,018	0	0	0	0	2,018	2,018

Table Q-3. ALTERNATIVE A - LEASABLE MINERALS AND RENEWABLE ENERGY
Wind Power Classification

Description	ALTERNATIVE A LEASABLE MINERALS AND RENEWABLE ENERGY Wind Power Classification Federal Surface 1 None	2 Marginal	3 Fair	4 Good	5 Excellent	6 Outstanding	7 Superb	TOTAL
No Leasing								
BLM Closures								
T. 31 N., R. 83 W: Portions of Section 25 and 26 T. 39 N., R. 80 W. Portions of Section 20 and 28 T. 40 N., R. 77 W. Portions of Section 15 and 22 Portions of the South Bighorns/Red Wall	337	2,730	5,455	2,817	1,994	898	36	14,267
Other Agency Closures								
Camp Guernsey (Military)	620	2,502	2,046	452	0	0	0	5,620
Fort Laramie National Historic Site (NPS)	0	0	0	0	0	0	0	0
Naval Petroleum Reserve No. 3 (DOE)	0	0	5,531	3,724	69	0	0	9,324
No Surface Occupancy (NSO)								
NSO within ¼ mile of North Platte River	817	7,474	4,884	1,822	271	18	0	15,286
NSO on certain parcels of Muddy Mountain elk crucial winter range.	0	0	113	115	231	1,291	2,043	3,793
NSO within Bald Eagle Roosts	343	6,375	11,026	9,403	4,259	5,020	864	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	45	902	420	1,128	0	0	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	321	7,387	8,091	3,591	1,199	90	0	20,679
NSO Pterodactyl Tracks withdrawal area	0	0	420	648	289	256	0	1,613
NSO within ½ mile of Red Wall/Gray Wall complex	0	7,965	31,427	8,795	563	0	0	48,750
NSO on sensitive soils and fragile watersheds (JW this is the Converse County Stip file)	266	648	730	1,364	2,826	3,168	4,434	13,436
VRM Class II	5,109	49,194	91,302	53,487	43,185	79,085	44,605	365,967
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	343	3,485	2,651	1,512	1,220	1,326	567	11,104
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	62	3,445	7,745	4,644	5,092	961	0	21,944
Muddy Mountain Environmental Education Area	0	25	277	216	402	450	67	1,437
Table Mountain Withdrawal	0	74	1,882	51	0	0	0	2,007

Table Q-4. ALTERNATIVE A - LEASABLE MINERALS AND RENEWABLE ENERGY
Trona Development Potential and Phosphate Development Potential

Description	ALTERNATIVE A LEASABLE MINERALS AND RENEWABLE ENERGY							
	Trona Development Potential				Phosphate Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
No Leasing								
BLM Closures								
T. 31 N., R. 83 W: Portions of Section 25 and 26 T. 39 N., R. 80 W. Portions of Section 20 and 28 T. 40 N., R. 77 W. Portions of Section 15 and 22 Portions of the South Bighorns/Red Wall	14,266	0	22,132	22,132	14,266	2,956	19,177	22,133
Other Agency Closures								
Camp Guernsey (Military)	0	0	5,620	5,620	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS)	0	0	792	792	0	0	792	792
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
No Surface Occupancy (NSO)								
NSO within ¼ mile of North Platte River	3,488	0	15,286	15,286	3,488	0	15,286	15,286
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	37,290	37,290	14,054	0	37,290	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	20,679	20,679	6,431	0	20,679	20,679
NSO Pterodactyl Tracks withdrawal area	1,613	0	1,613	1,613	1,613	0	1,613	1,613
NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	48,750	48,750	35,914	1,360	47,390	48,750
NSO on sensitive soils and fragile watersheds (JW this is the Converse County Stip file)	13,435	0	46,318	46,318	13,435	0	46,318	46,318
VRM Class II	1,098,727	0	365,967	365,967	1,098,727	4,443	361,524	365,967
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	3,938	0	11,104	11,104	3,938	0	11,104	11,104
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	0	80,285	80,285	21,954	0	80,285	80,285
Muddy Mountain Environmental Education Area`	1,437	0	1,212	1,212	1,437	0	1,212	1,212
Table Mountain Withdrawal	2,.018	0	2,018	2,018	2,018	0	2,018	2,018

Table Q-5. ALTERNATIVE A - LOCATABLE MINERALS
Uranium Development Potential

Description	ALTERNATIVE A LOCATABLE MINERALS			
	Uranium Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Resource Protection Withdrawals				
Bald Eagle Roosts	14,054	0	37,290	37,290
Muddy Mountain EEA	1,434	0	1,212	1,212
Table Mountain, Bump-Sullivan and Springer	2,015	0	2,017	2,017
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	1,613	0	1,613	1,613
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Classifications				
Recreation and Public Purposes Classifications	595	0	3468	3468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military)	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS)	0	0	745	745
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	11	79	90

Table Q-6. ALTERNATIVE A - LOCATABLE MINERALS
Other Base and Precious Metals Development Potential

Description	ALTERNATIVE A LOCATABLE MINERALS			
	Other Base and Precious Metals Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	372	36,918	37,290
Muddy Mountain EEA	1,434	0	1,212	1,212
Table Mountain, Bump-Sullivan and Springer	2,015	0	2,018	2,018
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	1,613	0	1,613	1,613
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military)	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS)	0	0	745	745
National Wildlife Refuge (USFWS)	0	0	7458	7458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	90	0	90

Appendix Q – Mineral Development Potential

Table Q-7. ALTERNATIVE A - LOCATABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE A LOCATABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	5,697	31,593	37,290
Muddy Mountain EEA	1,434	127	1,085	1,212
Table Mountain, Bump-Sullivan and Springer	2,015	0	2,018	2,018
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	1,613	611	1,002	1,613
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River Protective Withdrawal	3,222	1,160	2,066	3,226
Classifications				
Recreation and Public Purposes Classifications	595	168	3,300	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military)	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS)	0	0	745	745
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	234	12,869	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90

Table Q-8. ALTERNATIVE A - LOCATABLE MINERALS
Gypsum Development Potential and Limestone Development Potential

Description	ALTERNATIVE A LOCATABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations								
Resource Protection Withdrawals								
Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
Muddy Mountain EEA	1,434	0	1,212	1,212	1,434	0	1,212	1,212
Table Mountain, Bump-Sullivan and Springer	2,015	0	2,018	2,018	2,015	0	2,018	2,018
Special Designations and Other Management Area Withdrawals								
Alcova Fossil Area	1,613	352	1,261	1,613	1,613	0	1,613	1,613
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River Protective Withdrawal	3,222	61	3,165	3,226	3,222	0	3,226	3,226
Classifications								
Recreation and Public Purposes Classifications	595	23	3,445	3,468	595	159	3,309	3,468
Other Segregations								
Other Agency Withdrawals								
Air Navigation Site (FAA)	198	0	198	198	198	0	198	198
Camp Guernsey (Military)	0	0	5,620	5,620	0	4,712	908	5,620
Fort Laramie National Historic Site (NPS)	0	0	745	745	0	0	745	745
National Wildlife Refuge (USFWS)	0	0	7,458	7,458	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
Reclamation (USBR)	0	200	12,903	13,103	0	2,425	10,678	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90	0	0	90	90

Appendix Q – Mineral Development Potential

Table Q-9. ALTERNATIVE A - SALABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE A SALABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
Closed to Mineral Material Disposal				
¼ mile of Entire Length of the North Platte River in the Planning Area	3,488	413	14,873	15,286
Jackson Canyon ACEC	3,938	125	10,979	11,104
No Surface Occupancy (NSO) Effectively Closing Areas to Mineral Material Disposal				
NSO within 1/4 mile of North Platte River	3,488	413	14,873	15,286
NSO on certain parcels of Muddy Mountain elk crucial winter range	166	0	3793	3,793
NSO within Bald Eagle Roosts	14,504	5,697	31,593	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	1,812	18,867	20,679
NSO Pterodactyl Tracks withdrawal area	1,613	611	1,002	1,613
NSO within ½ mile of Red Wall/Gray Wall complex	35,914	721	48,029	48,750
NSO on sensitive soils and fragile watersheds	13,435	0	46,318	46,318
VRM Class II	1,098,727	9,252	356,715	365,967
Special Designations and Other Management Areas				
NSO within Jackson Canyon ACEC	3,938	125	10,979	11,104
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	3,962	76,323	80,285

Table Q-10. ALTERNATIVE A - SALABLE MINERALS
Gypsum Development Potential and Limestone Development Potential

Description	ALTERNATIVE A SALABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
Closed to Mineral Material Disposal								
¼ mile of Entire Length of the North Platte River in the Planning Area	3,488	365	14,921	15,286	3,488	2,211	13,075	15,286
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
No Surface Occupancy (NSO) Effectively Closing Areas to Mineral Material Disposal								
NSO within 1/4 mile of North Platte River	3,488	365	14,921	15,286	3,488	2,211	13,075	15,286
NSO on certain parcels of Muddy Mountain elk crucial winter range	166	580	3,213	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	226	2,269	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	940	19,739	20,679	6,431	1,817	18,862	20,679
NSO Pterodactyl Tracks withdrawal area	1,613	352	1,261	1,613	1,613	0	1,613	1,613
NSO within ½ mile of Red Wall/Gray Wall complex	35,914	39,695	9,055	48,750	35,914	0	48,750	48,750
NSO on sensitive soils and fragile watersheds	13,435	398	45,920	46,318	13,435	2,144	44,174	46,318
VRM Class II	1,098,727	60,796	305,171	365,967	1,098,727	22,679	343,288	365,967
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	1,132	79,153	80,285	21,954	1,144	79,141	80,285

Appendix Q – Mineral Development Potential

Table Q-11. ALTERNATIVE B - LEASABLE MINERALS AND RENEWABLE ENERGY
Conventional Oil and Gas Development Potential

Description	ALTERNATIVE B LEASABLE MINERALS AND RENEWABLE ENERGY						
	Conventional Oil and Gas Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
No Leasing							
BLM Closures							
Fragmentation Blocks 1-16	413,552	0	1	46,515	501,814	31,677	58,0007
NSO within ¼ mile of North Platte River	3,488	0	231	2,313	11,675	1,067	15,286
Sand Hills SMA	17,633	0	355	17,278	0	0	17,633
South Bighorns/Red Wall ACEC/SMA	146,812	0	7,946	19,216	170,568	18,730	216,460
Other Agency Closures							
Camp Guernsey (Military) plus expanded area	6,187	0	0	0	11,850	0	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	0	0	940	0	940
Naval Petroleum Reserve No. 3 (DOE)	0	733	0	8,591	0	0	9,324
No Surface Occupancy (NSO)							
NSO on highly erosive soils	256,240	6,661	13,222	180,740	331,233	43,922	575,778
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	3,793	0	3,793
NSO within Bald Eagle Roosts	14,054	0	0	15,975	21,315	0	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	790	1,705	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	2,532	15,935	2,212	20,679
Sharp-tail Grouse							
NSO within ½ mile of occupied sharp-tailed grouse leks	0	0	0	0	724	118	842
NSO within 4 miles of sharp-tail lek	1,775	0	0	0	43,646	3,908	47,554
Greater Sage-grouse							
Bates Hole and Fish Creek Willow Creek							
NSO ¾ -mile of occupied sage-grouse leks	13,702	0	0	0	26,772	1,246	28,018
NSO 4 miles of occupied sage-grouse lek	503,791	0	0	0	221,282	13,532	234,814

Table Q-11. ALTERNATIVE B - LEASABLE MINERALS AND RENEWABLE ENERGY
Conventional Oil and Gas Development Potential (Continued)

Description	ALTERNATIVE B LEASABLE MINERALS AND RENEWABLE ENERGY						
	Oil and Gas Development Potential (Continued)						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
Areas Outside of Bates Hole and Fish Creek Willow Creek							
NSO ½ mile of occupied sage-grouse leks	23,334	0	3,477	27,351	22,849	1,561	55,238
NSO 4 miles of occupied sage-grouse lek	1,075	12,015	112,275	877,073	715,663	65,927	1,782,953
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	8,073	492	229	0	7,352	0	8073
NSO VRM Class II	408,576	0	19,687	63,405	851,724	127,734	1,062,550
Special Designations and Other Management Areas							
Alcova Fossil Area ACEC/SMA	5,981	0	0	0	6,913	0	6,913
NSO within Jackson Canyon ACEC	3,938	0	0	0	11,104	0	11,104
NSO in Cedar Ridge TCP	3,372	0	3,501	581	0	0	4,082
South Bighorns/Red Wall ACEC - NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	0	3,464	45,286	0	48,750
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	2,517	4,213	36,265	35,761	1529	80,285

Appendix Q – Mineral Development Potential

Table Q-12. ALTERNATIVE B - LEASABLE MINERALS AND RENEWABLE ENERGY
Coalbed Natural Gas Development Potential

Description	ALTERNATIVE B LEASABLE MINERALS AND RENEWABLE ENERGY						
	CBNG Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
No Leasing							
BLM Closures							
Fragmentation Blocks 1-16	413,552	0	0	8,872	2,864	568,271	580,007
NSO within ¼ mile of North Platte River	3,488	0	0	0	466	14,820	15,286
Sand Hills SMA	17,633	0	0	0	1,016	16,617	17,633
South Bighorns/Red Wall ACEC/SMA	146,812	0	0	0	3,910	212,550	216,460
Other Agency Closures							
Camp Guernsey (Military) plus expanded area	6,187	0	0	0	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	0	0	0	940	940
Naval Petroleum Reserve No. 3 (DOE)	0	0	0	0	0	9,324	9,324
No Surface Occupancy (NSO)							
NSO on highly erosive soils	256,240	1,177	4,231	58,264	27,783	484,323	575,778
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	0	0	8,804	28,486	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	0	0	2495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	0	1,114	19,565	20,679
Sharp-tail Grouse							
NSO within ½ mile of occupied sharp-tailed grouse leks	0	0	0	0	0	842	842
NSO within 4 miles of sharp-tail lek	1,775	0	0	0	0	47,554	47,554

Table Q-12. ALTERNATIVE B - LEASABLE MINERALS AND RENEWABLE ENERGY
Coalbed Natural Gas Development Potential (Continued)

Description	ALTERNATIVE B LEASABLE MINERALS AND RENEWABLE ENERGY						
	CBNG Development Potential (Continued)						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
Greater Sage-grouse							
Bates Hole and Fish Creek Willow Creek							
NSO ¾ -mile of occupied sage-grouse leks	13,702	0	0	0	0	28,018	28,018
NSO 4 miles of occupied sage-grouse lek	503,791	0	0	0	323	234,491	234,814
Areas Outside of Bates Hole and Fish Creek Willow Creek							
NSO ½ mile of occupied sage-grouse leks	23,334	0	65	7,611	12,115	35,447	55,238
NSO 4 miles of occupied sage-grouse lek	1,075	0	16,427	223,867	388,500	1,154,159	1,782,953
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	8,073	0	0	492	229	7,352	8,073
NSO VRM Class II	408,576	0	0	6,540	14,779	1,041,231	1,062,550
Special Designations and Other Management Areas							
Alcova Fossil Area ACEC/SMA	5,981	0	0	0	0	6,913	6,913
NSO within Jackson Canyon ACEC	3,938	0	0	0	0	0	0
NSO in Cedar Ridge TCP	3,372	0	0	0	3,003	1,079	4,082
South Bighorns/Red Wall ACEC - NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	0	0	0	48,750	48,750
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	0	1,773	10,194	11,881	56,539	80,387

Table Q-13. ALTERNATIVE B - LEASABLE MINERALS AND RENEWABLE ENERGY
Wind Power Classification

Description	ALTERNATIVE B LEASABLE MINERALS AND RENEWABLE ENERGY							
	Wind Power Classification							
	Federal Surface							
	1 None	2 Marginal	3 Fair	4 Good	5 Excellent	6 Outstanding	7 Superb	TOTAL
NO LEASING								
BLM Closures								
Fragmentation Blocks 1-16	1,509	86,710	334,549	97,840	29,401	25,463	4,535	580,007
NSO within ¼ mile of North Platte River	817	7,474	4,884	1,822	271	18	0	15,286
Sand Hills SMA	0	0	0	3,046	14,432	155	0	17,633
South Bighorns/Red Wall ACEC/SMA	4,413	41,456	89,533	33,233	15,528	27,194	5,103	216,460
Other Agency Closures								
Camp Guernsey (Military) plus expanded area	844	4,613	4,972	1,421	0	0	0	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	149	0	0	0	0	149
Naval Petroleum Reserve No. 3 (DOE)	0	0	5,531	3,724	69	0	0	9,324
NO SURFACE OCCUPANCY (NSO)								
NSO on highly erosive soils	1,147	74,920	211,682	156,568	86,163	39,371	5,927	575,778
NSO on certain parcels of Muddy Mountain elk crucial winter range.	0	0	113	115	231	1,291	2,043	3,793
NSO within Bald Eagle Roosts	343	6,375	11,026	9,403	4,259	5,020	864	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	45	902	420	1,128	0	0	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	321	7,387	8,091	3,591	1,199	90	0	20,679
Sharp-tail Grouse								
NSO within ½ mile of occupied sharp-tailed grouse leks	0	0	0	503	0	339	0	842
NSO within 4 miles of sharp-tail lek	0	471	11,717	14,819	9,918	10,530	99	47,554
Greater sage-grouse								
Bates Hole and Fish Creek Willow Creek								
NSO ¾ mile of occupied sage-grouse leks	1,855	6,863	6,499	10,191	1,480	1,130	0	28,018
NSO 4 miles of occupied sage-grouse lek	8,134	39,772	63,879	80,038	23,927	17,806	1,258	234,814

Table Q-13. ALTERNATIVE B - LEASABLE MINERALS AND RENEWABLE ENERGY
Wind Power Classification (Continued)

Description	ALTERNATIVE B LEASABLE MINERALS AND RENEWABLE ENERGY Wind Power Classification (Continued) Federal Surface							
	1 None	2 Marginal	3 Fair	4 Good	5 Excellent	6 Outstanding	7 Superb	TOTAL
Areas Outside of Bates Hole and Fish Creek Willow Creek								
NSO ½ mile of occupied sage-grouse leks	534	6,760	25,002	12,867	7,279	2,796	0	55,238
NSO 4 miles of occupied sage-grouse lek	15,118	252,149	741,280	428,299	217,076	115,793	13,238	1,782,953
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	228	584	5,189	2,072	0	0	0	8,073
NSO VRM Class II	14,994	173,268	367,300	184,004	103,119	129,656	90,209	1,062,550
Special Designations and Other Management Areas								
Alcova Fossil Area ACEC/SMA	0	0	690	2,288	1,606	1,993	336	6,913
NSO within Jackson Canyon ACEC	343	3,485	2,651	1,512	1,220	1,326	567	11,104
NSO in Cedar Ridge TCP	267	2,232	1,451	132	0	0	0	4,082
South Bighorns/Red Wall ACEC - NSO within ½ mile of Red Wall/Gray Wall complex	0	7,965	31,427	8,795	563	0	0	48,750
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	62	3,445	7,745	4,644	5,092	961	0	21,949

Table Q-14. ALTERNATIVE B - LEASABLE MINERALS AND RENEWABLE ENERGY
Trona Development Potential and Phosphate Development Potential

Description	ALTERNATIVE B LEASABLE MINERALS AND RENEWABLE ENERGY							
	Trona Development Potential				Phosphate Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
NO LEASING								
BLM Closures								
Fragmentation Blocks 1-16	413,552	0	580,007	580,007	413,552	3,945	576,062	580,007
NSO within ¼ mile of North Platte River	3,488	0	15,286	15,286	3,488	0	15,286	15,286
Sand Hills SMA	17,633	0	17,633	17,633	17,633	0	17,633	17,633
South Bighorns/Red Wall ACEC/SMA	146,812	0	216,460	216,460	146,812	8,976	207,484	216,460
Other Agency Closures								
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	940	940	149	0	940	940
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
NO SURFACE OCCUPANCY (NSO)								
NSO on highly erosive soils	256,240	255	575,523	575,778	256,240	294	575,484	575,778
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	37,290	37,290	14,054	0	37,290	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	20,679	20,679	6,431	0	20,679	20,679
Sharp-tail Grouse								
NSO within ½ mile of occupied sharp-tailed grouse leks	0	0	842	842	0	0	842	842
NSO within 4 miles of sharp-tail lek	1,775	0	47,554	47,554	1,775	0	47,554	47,554
Greater Sage-grouse								
Bates Hole and Fish Creek Willow Creek								
NSO ¾ mile of occupied sage-grouse leks	13,702	0	28,018	28,018	13,702	0	28,018	28,018
NSO 4 miles of occupied sage-grouse lek	503,791	0	234,814	234,814	503,791	0	23,814	23,814

Table Q-14. ALTERNATIVE B - LEASABLE MINERALS AND RENEWABLE ENERGY
Trona Development Potential and Phosphate Development Potential (Continued)

Description	ALTERNATIVE B LEASABLE MINERALS AND RENEWABLE ENERGY							
	Trona Development Potential (Continued)				Phosphate Development Potential (Continued)			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
Areas Outside of Bates Hole and Fish Creek Willow Creek								
NSO ½ mile of occupied sage-grouse leks	23,334	0	55,238	55,238	23,334	144	55,094	55,238
NSO 4 miles of occupied sage-grouse lek	1,075	322	1,782,631	1,782,953	1,075	6,005	1,776,948	1,782,953
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	8,073	0	8,073	8,073	8,073	0	8,073	8,073
NSO VRM Class II	408,576	5	1,062,545	1,062,550	408,576	9,030	1,053,520	1,062,550
Special Designations and Other Management Areas								
Alcova Fossil Area ACEC/SMA	5,981	0	6,913	6,913	5,981	0	6,913	6,913
NSO within Jackson Canyon ACEC	3,938	0	11,104	11,104	3,938	0	11,104	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
South Bighorns/Red Wall ACEC - NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	48,750	48,750	35,914	1,360	47,390	48,750
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	0	80,285	80,285	21,954	0	80,285	80,285

Table Q-15. ALTERNATIVE B - LOCATABLE MINERALS
Uranium Development Potential

Description	ALTERNATIVE B LOCATABLE MINERALS			
	Uranium Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Resource Protection Withdrawals				
Bald Eagle Roosts	14,054	0	37,290	37,290
Fragmentation Blocks 1 through 16	413,552	0	580,007	580,007
Fremont Canyon	1,180	0	1,261	1,261
Muddy Mountain EEA	1,434	0	1,212	1,212
Table Mountain, Bump-Sullivan and Springer	2,015	0	2,018	2,018
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,981	0	6,913	6,913
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	146,812	0	216,460	216,460
National Historic Trails and Historic Trails				
Trails Viewshed	244,622	108,560	815,593	924,153
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	11	79	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	147	210	357

Table Q-16. ALTERNATIVE B - LOCATABLE MINERALS
Other Base and Precious Metals Development Potential

Description	ALTERNATIVE B LOCATABLE MINERALS			
	Other Base and Precious Metals Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	372	36,918	37,290
Fragmentation Blocks 1 through 16	413,552	0	580,007	580,007
Fremont Canyon	1,180	0	1,261	1,261
Muddy Mountain EEA	1,434	0	1,212	1,212
Table Mountain, Bump-Sullivan and Springer	2,015	0	2,018	2,018
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,981	0	6,913	6,913
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	146,812	0	216,460	216,460
National Historic Trails and Historic Trails				
Trails Viewshed	244,622	5,248	918,905	924,153
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	90	0	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	357	0	357

Table Q-17. ALTERNATIVE B - LOCATABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE B LOCATABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	5,697	31,593	37,290
Fragmentation Blocks 1 through 16	413,552	507,616	72,391	580,007
Fremont Canyon	1,180	0	1,261	1,261
Muddy Mountain EEA	1,434	127	1,085	1,212
Table Mountain, Bump-Sullivan and Springer	2,015	0	2,018	2,018
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,981	2,274	4,639	6,913
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River Protective Withdrawal	3,222	1,160	2,066	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	146,812	23,332	193,128	216,460
National Historic Trails and Historic Trails				
Trails Viewshed	244,622	27,687	896,466	924,153
Classifications				
Recreation and Public Purposes Classifications	595	168	3,300	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	234	12,869	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	357	0	357

Table Q-18. ALTERNATIVE B - LOCATABLE MINERALS
Gypsum Development Potential and Limestone Development Potential

Description	ALTERNATIVE B LOCATABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations								
Resource Protection Withdrawals								
Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
Fragmentation Blocks 1 through 16	413,552	55,947	524,060	580,007	413,552	10,859	569,148	580,007
Fremont Canyon	1,180	2	1,259	1,261	1,180	156	1,105	1,261
Muddy Mountain EEA	1,434	0	1,212	1,212	1,434	0	1,212	1,212
Table Mountain, Bump-Sullivan and Springer	2,015	0	2,018	2,018	2,015	0	2,018	2,018
Special Designations and Other Management Area Withdrawals								
Alcova Fossil Area	5,981	591	6,322	6,913	5,981	0	6,913	6,913
Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River Protective Withdrawal	3,222	61	3,165	3,226	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633	17,633	0	17,633	17,633
South Bighorns/Red Wall	146,812	67,421	149,039	216,460	146,812	16,398	200,062	216,460
National Historic Trails and Historic Trails								
Trails Viewshed	244,622	6,145	918,008	924,153	244,622	31,319	892,834	924,153
Classifications								
Recreation and Public Purposes Classifications	595	23	3,445	3,468	595	159	3,309	3,468
Other Segregations								
Other Agency Withdrawals								
Air Navigation Site (FAA)	198	0	198	198	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850	6,187	7,429	4,421	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
Reclamation (USBR)	0	200	12,903	13,103	0	2,425	10,678	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90	0	0	90	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	38	319	357	357	357	0	357

Table Q-19. ALTERNATIVE B - SALABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE B SALABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
CLOSED TO MINERAL MATERIAL DISPOSAL				
Fragmentation Blocks 1-16	413,552	507,616	72,391	580,007
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River ACEC / SRMA	3,488	413	14,873	15,286
Sand Hills SMA	17,633	0	17,633	17,633
South Bighorns/Red Wall ACEC/SMA	146,812	23,332	193,128	216,460
NO SURFACE OCCUPANCY (NSO) EFFECTIVELY CLOSING AREAS TO MINERAL MATERIAL DISPOSAL				
NSO on highly erosive soils	256,240	41,080	534,698	575,778
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	5,697	31,593	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	1,812	18,867	20,679
Sharp-tail Grouse				
NSO within ½ mile of occupied sharp-tailed grouse leks	0	0	842	842
NSO within 4 miles of sharp-tail lek	1,775	0	47,554	47,554
Greater Sage-grouse				
Bates Hole and Fish Creek Willow Creek				
NSO ¾ mile of occupied sage-grouse leks	13,702	1,705	26,313	28,018
NSO 4 miles of occupied sage-grouse lek	503,791	15,696	219,118	234,814
Areas Outside of Bates Hole and Fish Creek Willow Creek				
NSO ½ mile of occupied sage-grouse leks	23,334	2,742	52,496	55,238
NSO 4 miles of occupied sage-grouse lek	1,075	117,793	1,665,160	1,782,953
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	7,573	0	11,451	11,451
NSO VRM Class II	408,576	130,173	932,377	1,062,550
Special Designations and Other Management Areas				
Alcova Fossil Area ACEC/SMA	5,981	2,274	4,639	6,913
NSO within Jackson Canyon ACEC	3,938	125	10,979	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082
South Bighorns/Red Wall ACEC - ½ mile of the Red Wall/Gray Wall complex	35,914	721	48,029	48,750
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	3,962	76,323	80,285

Table Q-20. ALTERNATIVE B - SALABLE MINERALS
Gypsum Development Potential and Limestone Development Potential

Description	ALTERNATIVE B SALABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
CLOSED TO MINERAL MATERIAL DISPOSAL								
Fragmentation Blocks 1-16	413,552	55,947	524,060	580,007	413,552	10,859	569,148	580,007
Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River ACEC / SRMA	3,488	365	14,923	15,288	3,488	2,211	13,077	15,288
Sand Hills SMA	17,633	0	17,633	17,633	17,633	0	17,633	17,633
South Bighorns/Red Wall ACEC/SMA	146,812	67,421	149,039	216,460	146,812	16,398	200,062	216,460
NO SURFACE OCCUPANCY (NSO) EFFECTIVELY CLOSING AREAS TO MINERAL MATERIAL DISPOSAL								
NSO on highly erosive soils	256,240	25,547	550,231	575,778	256,240	16,492	559,286	575,778
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	580	3,213	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	226	2,269	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	940	19,739	20,679	6,431	1,817	18,862	20,679
Sharp-tail Grouse								
NSO within ½ mile of occupied sharp-tailed grouse leks	0	0	842	842	0	0	842	842
NSO within 4 miles of sharp-tail lek	1,775	0	47,554	47,554	1,775	823	46,731	47,554
Greater Sage-grouse								
Bates Hole and Fish Creek Willow Creek								
NSO ¾ mile of occupied sage-grouse leks	13,702	932	27,086	28,018	13,702	66	20,752	20,818
NSO 4 miles of occupied sage-grouse lek	503,791	9,440	225,374	234,814	503,791	1,681	233,133	234,814

Table Q-20. ALTERNATIVE B - SALABLE MINERALS
Gypsum Development Potential and Limestone Development Potential (Continued)

Description	ALTERNATIVE B SALABLE MINERALS							
	Gypsum Development Potential (Continued)				Limestone Development Potential (Continued)			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
Areas Outside of Bates Hole and Fish Creek Willow Creek								
NSO ½ mile of occupied sage-grouse leks	23,334	1,099	54,139	55,238	23,334	0	55,238	55,238
NSO 4 miles of occupied sage-grouse lek	1,075	55,764	1,727,189	1,782,953	1,075	16,301	1,766,652	1,782,953
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	7,573	0	11,451	11,451	7,573	0	11,451	11,451
NSO VRM Class II	408,576	105,662	956,888	1,062,550	408,576	44,609	1,017,941	1,062,550
Special Designations and Other Management Areas								
Alcova Fossil Area ACEC/SMA	5,981	591	6,322	6,913	5,981	0	6,913	6,913
NSO within Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
South Bighorns/Red Wall ACEC - ½ mile of the Red Wall/Gray Wall complex	35,914	39,695	9,055	48,750	35,914	0	48,750	48,750
NSO within ¼ mile or visual horizon, of historic trails which ever is closer	21,954	1,132	79,153	80,285	21,954	1,144	79,141	80,285

Table Q-21. ALTERNATIVE C - LEASABLE MINERALS AND RENEWABLE ENERGY
Conventional Oil and Gas Development Potential

Description	ALTERNATIVE C LEASABLE MINERALS AND RENEWABLE ENERGY						
	Conventional Oil and Gas Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
NO LEASING							
BLM Closures							
Fragmentation Blocks 3, 5, 8, 11, 13, 14, 15, 16	177,035	0	0	116	215,915	22,693	238,724
North Platte River ACEC/SRMA	2,386	0	212	1,152	5,473	1,003	7,840
Sand Hills SMA	17,633	0	355	17,278	0	0	17,633
South Bighorns/Red Wall ACEC/SMA	206,155	0	1	39,653	255,165	15,035	309,854
Other Agency Closures							
Camp Guernsey (Military) plus expanded area	6,187	0	0	0	11,850	0	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	0	0	940	0	940
Naval Petroleum Reserve No. 3 (DOE)	0	733	0	8,591	0	0	9,324
NO SURFACE OCCUPANCY (NSO)							
NSO on certain parcels of Muddy Mountain elk crucial winter range	166	0	0	0	3,793	0	3,793
NSO within Bald Eagle Roosts	14,054	0	0	15,975	21,315	0	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	790	1,705	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	2,532	15,935	2,212	20,679
Sharp-tail Grouse							
NSO within ¼ mile of occupied sharp-tailed grouse leks	0	0	0	0	209	18	227
NSO within 2 miles of sharp-tail lek	80	0	0	0	10,608	1,837	12,445
Greater Sage-grouse							
Bates Hole and Fish Creek Willow Creek							
NSO ½ mile of occupied sage-grouse leks	6,584	0	0	0	13,244	775	14,019
NSO 2 miles of occupied sage-grouse lek	127,595	0	0	0	63,877	5,111	68,988
Areas Outside of Bates Hole and Fish Creek Willow Creek							
NSO ¼ mile of occupied sage-grouse leks	6,110	0	996	6,921	5,693	395	14,005
NSO 2 miles of occupied sage-grouse lek	283,376	214	50,309	336,442	279,835	21,961	688,761
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	7,761	1,546	417	1,548	8,295	0	11,806
NSO VRM Class II	367,151	0	10,957	52,524	687,140	65,689	816,310
Special Designations and Other Management Areas							
NSO within Jackson Canyon ACEC	3,938	0	0	0	11,104	0	11,104
NSO in Cedar Ridge TCP	3,372	0	3,501	581	0	0	4,082

Table Q-22. ALTERNATIVE C - LEASABLE MINERALS AND RENEWABLE ENERGY
Coalbed Natural Gas Development Potential

Description	ALTERNATIVE C LEASABLE MINERALS AND RENEWABLE ENERGY						
	CBNG Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
NO LEASING							
BLM Closures							
Fragmentation Blocks 3, 5, 8, 11, 13, 14, 15, 16	177,035	0	0	1,194	2,865	234,665	238,724
North Platte River ACEC/SRMA	2,386	0	0	0	0	7,840	7,840
Sand Hills SMA	17,633	0	0	0	1,016	16,617	17,633
South Bighorns/Red Wall ACEC/SMA	206,155	0	0	0	0	309,854	309,854
Other Agency Closures							
Camp Guernsey (Military) plus expanded area	6,187	0	0	0	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	0	0	0	940	940
Naval Petroleum Reserve No. 3 (DOE)	0	0	0	0	0	9,324	9,324
NO SURFACE OCCUPANCY (NSO)							
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	0	0	8,804	28,486	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	0	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	0	1,114	19,565	20,679
Sharp-tail Grouse							
NSO within ¼ mile of occupied sharp-tailed grouse leks	0	0	0	0	0	227	227
NSO within 2 miles of sharp-tail lek	80	0	0	0	0	12,445	12,445
Greater sage-grouse							
Bates Hole and Fish Creek Willow Creek							
NSO ½ mile of occupied sage-grouse leks	6,584	0	0	0	0	14,019	14,019
NSO 2 miles of occupied sage-grouse lek	127,595	0	0	0	0	68,988	68,988
Areas Outside of Bates Hole and Fish Creek Willow Creek							
NSO ¼ mile of occupied sage-grouse leks	6,110	0	36	1,995	3,103	8,871	14,005
NSO 2 miles of occupied sage-grouse lek	283,376	0	2,977	92,328	160,714	432,742	688,761
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	7,761	0	0	1,546	903	9,357	11,806
NSO VRM Class II	367,151	0	0	5,421	9,571	801,318	816,310
Special Designations and Other Management Areas							
NSO within Jackson Canyon ACEC	3,938	0	0	0	0	0	0
NSO in Cedar Ridge TCP	3,372	0	0	0	3,003	1,079	4,082

Table Q-23. ALTERNATIVE C - LEASABLE MINERALS AND RENEWABLE ENERGY
Wind Power Classification

Description	ALTERNATIVE C - LEASABLE MINERALS AND RENEWABLE ENERGY Wind Power Classification Federal Surface 1 None	2 Marginal	3 Fair	4 Good	5 Excellent	6 Outstanding	7 Superb	TOTAL
NO LEASING								
BLM Closures								
Fragmentation Blocks 3,5,8,11,13,14,15,16	1,509	30,171	98,290	64,971	17,534	21,714	4,535	238,724
North Platte River ACEC/SRMA	24	2,751	3,090	1,708	251	16	0	7,840
Sand Hills SMA	0	0	0	3,046	14,432	155	0	17,633
South Bighorns/Red Wall ACEC/SMA	2,613	53,610	148,526	52,384	20,164	27,374	5,183	309,854
Other Agency Closures								
Camp Guernsey (Military) plus expanded area	844	4,613	4,972	1,421	0	0	0	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	149	0	0	0	0	149
Naval Petroleum Reserve No. 3 (DOE)	0	0	5,531	3,724	69	0	0	9,324
NO SURFACE OCCUPANCY (NSO)								
NSO on certain parcels of Muddy Mountain elk crucial winter range.	0	0	113	115	231	1,291	2,043	3,793
NSO within Bald Eagle Roosts	343	6,375	11,026	9,403	4,259	5,020	864	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	45	902	420	1,128	0	0	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	321	7,387	8,091	3,591	1,199	90	0	20,679
Sharp-tail Grouse								
NSO within ¼ mile of occupied sharp-tailed grouse leks	0	0	0	126	0	101	0	227
NSO within 2 miles of sharp-tail lek	0	0	0	0	0	0	0	0
Greater sage-grouse								
Bates Hole and Fish Creek Willow Creek								
NSO ½ mile of occupied sage-grouse leks	858	3,593	3,214	5,061	790	503	0	14,019
NSO 2 miles of occupied sage-grouse lek	1,531	11,293	21,111	28,615	3,640	2,747	51	68,988
Areas Outside of Bates Hole and Fish Creek Willow Creek								
NSO ¼ mile of occupied sage-grouse leks	171	1,466	6,643	3,240	1,772	713	0	14,005
NSO 2 miles of occupied sage-grouse lek	7,632	96,978	285,053	162,142	96,016	39,355	1,585	688,761
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	228	519	4,819	2,194	0	0	0	7,760
NSO VRM Class II	11,741	154,534	343,169	167,754	90,708	42,197	6,207	816,310
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	343	3,485	2,651	1,512	1,220	1,326	567	11,104
NSO in Cedar Ridge TCP	267	2,232	1,451	132	0	0	0	4,082

Table Q-24. ALTERNATIVE C - LEASABLE MINERALS AND RENEWABLE ENERGY
Trona Development Potential and Phosphate Development Potential

Description	ALTERNATIVE C LEASABLE MINERALS AND RENEWABLE ENERGY							
	Trona Development Potential				Phosphate Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
NO LEASING								
BLM Closures								
Fragmentation Blocks 3,5,8,11,13,14,15,16	177,035	0	238,724	238,724	177,035	3,945	234,779	238,724
North Platte River ACEC/SRMA	2,386	0	7,893	7,893	2,386	0	7,840	7,840
Sand Hills SMA	17,633	0	17,633	17,633	17,633	0	17,633	17,633
South Bighorns/Red Wall ACEC/SMA	206,155	0	309,854	309,854	206,155	9,010	300,844	309,854
Other Agency Closures								
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	940	940	149	0	940	940
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
NO SURFACE OCCUPANCY (NSO)								
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	37,290	37,290	14,054	0	37,290	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	20,679	20,679	6,431	0	20,679	20,679
Sharp-tail Grouse								
NSO within ¼ mile of occupied sharp-tailed grouse leks	0	0	227	227	0	0	227	227
NSO within 2 miles of sharp-tail lek	80	0	80	80	80	0	80	80
Greater Sage-grouse								
Bates Hole and Fish Creek Willow Creek								
NSO ½ mile of occupied sage-grouse leks	6,584	0	14,019	14,019	6,584	0	14,019	14,019
NSO 2 miles of occupied sage-grouse lek	127,595	0	68,988	68,988	127,595	0	68,988	68,988

Table Q-24. ALTERNATIVE C - LEASABLE MINERALS AND RENEWABLE ENERGY
Trona Development Potential and Phosphate Development Potential (Continued)

Description	ALTERNATIVE C LEASABLE MINERALS AND RENEWABLE ENERGY							
	Trona Development Potential (Continued)				Phosphate Development Potential (Continued)			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
Areas Outside of Bates Hole and Fish Creek Willow Creek								
NSO ¼ mile of occupied sage-grouse leks	6,110	0	14,005	14,005	6,110	26	13,979	14,005
NSO 2 miles of occupied sage-grouse lek	283,376	101	688,660	688,761	283,376	2,550	686,213	688,763
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	8,073	0	8,073	8,073	8,073	0	8,073	8,073
NSO VRM Class II	367,151	5	816,305	816,310	367,151	8,996	807,314	816,310
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	3,938	0	11,104	11,104	3,938	0	11,104	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082

Table Q-25. ALTERNATIVE C - LOCATABLE MINERALS
Uranium Development Potential

Description	ALTERNATIVE C LOCATABLE MINERALS			
	Uranium Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,282	0	5,805	5,805
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	206,155	0	309,854	309,854
National Historic Trails and Historic Trails				
Trails Viewshed	244,622	108,560	815,593	924,153
Resource Protection Withdrawals				
Bald Eagle Roosts	14,054	0	37,290	37,290
Fragmentation Blocks 3,5,8,11,13,14,15,16	177,035	0	238,724	238,724
Muddy Mountain EEA	1,434	0	1,212	1,212
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	11	79	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	147	210	357

Table Q-26. ALTERNATIVE C - LOCATABLE MINERALS
Other Base and Precious Metals Development Potential

Description	ALTERNATIVE C LOCATABLE MINERALS			
	Other Base and Precious Metals Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,282	0	5,805	5,805
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	206,155	0	309,854	309,854
National Historic Trails and Historic Trails				
Trails Viewshed	244,622	5,248	918,905	924,153
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	372	36,918	37,290
Fragmentation Blocks 3,5,8,11,13,14,15,16	177,035	0	238,724	238,724
Muddy Mountain EEA	1,434	0	1,212	1,212
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	90	0	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	357	0	357

Table Q-27. ALTERNATIVE C - LOCATABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE C LOCATABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,282	2,248	3,557	5,805
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River Protective Withdrawal	3,222	1,160	2,066	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	206,155	80,128	229,726	309,854
National Historic Trails and Historic Trails				
Trails Viewshed	244,622	27,687	896,466	924,153
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	5,697	31,593	37,290
Fragmentation Blocks 3,5,8,11,13,14,15,16	177,035	30,703	208,021	238,724
Muddy Mountain EEA	1,434	127	1,085	1,212
Classifications				
Recreation and Public Purposes Classifications	595	168	3,300	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	234	12,869	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	357	0	357

Table Q-28. ALTERNATIVE C - LOCATABLE MINERALS
Gypsum Development Potential Limestone Development Potential

Description	ALTERNATIVE C LOCATABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations								
Special Designations and Other Management Area Withdrawals								
Alcova Fossil Area	5,282	442	5,363	5,805	5,282	0	5,805	5,805
Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River Protective Withdrawal	3,222	61	3,165	3,226	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633	17,633	0	17,633	17,633
South Bighorns/Red Wall	206,155	78,914	230,940	309,854	206,155	15,221	294,633	309,854
National Historic Trails and Historic Trails								
Trails Viewshed	244,622	6,145	918,008	924,153	244,622	31,319	892,834	924,153
Resource Protection Withdrawals								
Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
Fragmentation Blocks 3,5,8,11,13,14,15,16	177,035	48,811	189,913	238,724	177,035	10,553	228,171	238,724
Muddy Mountain EEA	1,434	0	1,212	1,212	1,434	0	1,212	1,212
Classifications								
Recreation and Public Purposes Classifications	595	23	3,445	3,468	595	159	3,309	3,468
Other Segregations								
Other Agency Withdrawals								
Air Navigation Site (FAA)	198	0	198	198	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850	6,187	7,429	4,421	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
Reclamation (USBR)	0	200	12,903	13,103	0	2,425	10,678	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90	0	0	90	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	38	319	357	357	357	0	357

Table Q-29. ALTERNATIVE C - SALABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE C SALABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
CLOSED TO MINERAL MATERIAL DISPOSAL				
Fragmentation Blocks 3,5,8,11,13,14,15,16	177,035	30,703	208,021	238,724
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River ACEC / SRMA	2,386	381	7,459	7,840
Sand Hills SMA	17,633	0	17,633	17,633
NO SURFACE OCCUPACNY (NSO) EFFECTIVELY CLOSING AREAS TO MINERAL MATERIAL DISPOSAL				
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	5,697	31,593	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	1,812	18,867	20,679
Sharp-tail Grouse				
NSO within ¼ mile of occupied sharp-tailed grouse leks	0	0	227	227
NSO within 2 miles of sharp-tail lek	80	0	12,445	12,445
Greater Sage-grouse				
Bates Hole and Fish Creek Willow Creek				
NSO ½ mile of occupied sage-grouse leks	6,584	714	13,305	14,019
NSO 2 miles of occupied sage-grouse lek	127,595	3,908	65,080	68,988
Areas Outside of Bates Hole and Fish Creek Willow Creek				
NSO ¼ mile of occupied sage-grouse leks	6,110	769	13,236	14,005
NSO 2 miles of occupied sage-grouse lek	283,376	42,613	646,148	688,761
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	7,573	0	11,451	11,451
NSO VRM Class II	367,151	106,196	710,114	816,310
Special Designations and Other Management Areas				
NSO within Jackson Canyon ACEC	3,938	125	10,979	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082

Table Q-30. ALTERNATIVE C - SALABLE MINERALS
Gypsum Development Potential and Limestone Development Potential

Description	ALTERNATIVE C SALABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
CLOSED TO MINERAL MATERIAL DISPOSAL								
Fragmentation Blocks 3,5,8,11,13,14,15,16	177,035	48,811	189,913	238,724	177,035	10,553	228,171	238,724
Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River ACEC / SRMA	2,386	364	7,476	7,840	2,386	115	7,725	7,840
Sand Hills SMA	17,633	0	17,633	17,633	17,633	0	17,633	17,633
NO SURFACE OCCUPACNY (NSO) EFFECTIVELY CLOSING AREAS TO MINERAL MATERIAL DISPOSAL								
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	580	3,213	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	226	2,269	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	940	19,739	20,679	6,431	1,817	18,862	20,679
Sharp-tail Grouse								
NSO within ¼ mile of occupied sharp-tailed grouse leks	0	0	227	227	0	0	227	227
NSO within 2 miles of sharp-tail lek	80	0	12,445	12,445	80	0	12,445	12,445
Greater Sage-grouse								
Bates Hole and Fish Creek Willow Creek								
NSO ½ mile of occupied sage-grouse leks	6,584	559	13,460	14,019	6,584	14	14,005	14,019
NSO 2 miles of occupied sage-grouse lek	127,595	1,437	67,551	68,988	127,595	516	68,472	68,988
Areas Outside of Bates Hole and Fish Creek Willow Creek								
NSO ¼ mile of occupied sage-grouse leks	6,110	218	13,787	14,005	6,110	0	14,005	14,005
NSO 2 miles of occupied sage-grouse lek	283,376	13,201	675,560	688,761	283,376	1,281	687,480	688,761
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	7,573	0	11,451	11,451	7,573	0	11,451	11,451
NSO VRM Class II	367,151	95,311	720,999	816,310	367,151	26,712	789,598	816,310
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082

Table Q-31. ALTERNATIVE D - LEASABLE MINERALS AND RENEWABLE ENERGY
Conventional Oil and Gas Development Potential

Description	ALTERNATIVE D LEASABLE MINERALS AND RENEWABLE ENERGY						
	Conventional Oil and Gas Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
NO LEASING							
BLM Closures							
North Platte River ACEC / SRMA	2,239	0	0	0	5,051	1,003	6,054
Other Agency Closures							
Camp Guernsey (Military)	0	0	0	0	5,620	0	5,620
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	0	0	940	0	940
Naval Petroleum Reserve No. 3 (DOE)	0	733	0	8,591	0	0	9,324
NO SURFACE OCCUPANCY (NSO)							
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	3,793	0	3,793
NSO within Bald Eagle Roosts	14,054	0	0	15,975	21,315	0	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	790	1,705	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	2,532	15,935	2,212	20,679
NSO ¼ mile of Ferruginous Hawk and Golden Eagle ANS	2,091	244	0	0	1,849	0	2,093
NSO VRM Class II	205,542	0	16,331	28,031	366,978	54,348	465,688
Special Designations and Other Management Areas							
NSO within Jackson Canyon ACEC	3,938	0	0	0	11,104	0	11,104

Table Q-32. ALTERNATIVE D - LEASABLE MINERALS AND RENEWABLE ENERGY
Coalbed Natural Gas Development Potential

Description	ALTERNATIVE D LEASABLE MINERALS AND RENEWABLE ENERGY						
	CBNG Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
NO LEASING							
BLM Closures							
North Platte River ACEC / SRMA	2,239	0	0	0	0	6,054	6,054
Other Agency Closures							
Camp Guernsey (Military)	0	0	0	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	0	0	0	940	940
Naval Petroleum Reserve No. 3 (DOE)	0	0	0	0	0	9,324	9,324
NO SURFACE OCCUPANCY (NSO)							
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	0	0	8,804	28,486	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	0	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	0	1,114	19,565	20,679
NSO ¼ mile of Ferruginous Hawk and Golden Eagle ANS	2,091	0	0	244	0	1,849	2,093
NSO VRM Class II	205,542	0	0	0	7,666	458,022	465,688
Special Designations and Other Management Areas							
NSO within Jackson Canyon ACEC	3,938	0	0	0	0	0	0

Table Q-33. ALTERNATIVE D - LEASABLE MINERALS AND RENEWABLE ENERGY
Wind Power Classification

Description	ALTERNATIVE D LEASABLE MINERALS AND RENEWABLE ENERGY							
	Wind Power Classification							
	Federal Surface							
	1 None	2 Marginal	3 Fair	4 Good	5 Excellent	6 Outstanding	7 Superb	TOTAL
NO LEASING								
BLM Closures								
North Platte River ACEC / SRMA	24	2,160	2,283	1,320	251	16	0	6,054
Other Agency Closures								
Camp Guernsey (Military)	620	2,502	2,046	452	0	0	0	5,620
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	149	0	0	0	0	149
Naval Petroleum Reserve No. 3 (DOE)	0	0	5,531	3,724	69	0	0	9,324
NO SURFACE OCCUPANCY (NSO)								
NSO on certain parcels of Muddy Mountain elk crucial winter range.	0	0	113	115	231	1,291	2,043	3,793
NSO within Bald Eagle Roosts	343	6,375	11,026	9,403	4,259	5,020	864	37,290
NSO ¼ o 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	45	902	420	1,128	0	0	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	321	7,387	8,091	3,591	1,199	90	0	20,679
NSO ¼ mile of Ferruginous Hawk and Golden Eagle ANS	0	118	1,300	675	0	0	0	2,093
NSO VRM Class II	9,090	97,736	192,085	101,912	63,588	1,277	0	465,688
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	343	3,485	2,651	1,512	1,220	1,326	567	11,104

Table Q-34. ALTERNATIVE D - LEASABLE MINERALS AND RENEWABLE ENERGY
Trona Development Potential and Phosphate Development Potential

Description	ALTERNATIVE D LEASABLE MINERALS AND RENEWABLE ENERGY							
	Trona Development Potential				Phosphate Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
NO LEASING								
BLM Closures								
North Platte River ACEC / SRMA	2,239	0	6,054	6,054	2,239	0	6,054	6,054
Other Agency Closures								
Camp Guernsey (Military)	0	0	5,620	5,620	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	940	940	149	0	940	940
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
NO SURFACE OCCUPANCY (NSO)								
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	37,290	37,290	14,054	0	37,290	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	20,679	20,679	6,431	0	20,679	20,679
NSO ¼ mile of Ferruginous Hawk and Golden Eagle ANS	2,091	0	2,093	2,093	2,091	0	2,093	2,093
NSO VRM Class II	205,542	0	465,688	465,688	205,542	177	465,511	465,688
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	3,938	0	11,104	11,104	3,938	0	11,104	11,104

Table Q-35. ALTERNATIVE D - LOCATABLE MINERALS
Uranium Development Potential

Description	ALTERNATIVE D LOCATABLE MINERALS			
	Uranium Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Resource Protection Withdrawals				
Bald Eagle Roosts	14,054	0	37,290	37,290
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military)	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	11	79	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	147	210	357

Table Q-36. ALTERNATIVE D - LOCATABLE MINERALS
Other Base and Precious Metals Development Potential

Description	ALTERNATIVE D LOCATABLE MINERALS			
	Other Base and Precious Metals Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	372	36,918	37,290
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military)	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	90	0	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	357	0	357

Table Q-37. ALTERNATIVE D - LOCATABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE D LOCATABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River Protective Withdrawal	3,222	1,160	2,066	3,226
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	5,697	31,593	37,290
Classifications				
Recreation and Public Purposes Classifications	595	168	3,300	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military)	0	0	5,620	5,620
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	234	12,869	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	357	0	357

Table Q-38. ALTERNATIVE D - LOCATABLE MINERALS
Gypsum Development Potential and Limestone Development Potential

Description	ALTERNATIVE D LOCATABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations								
Special Designations and Other Management Area Withdrawals								
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River Protective Withdrawal	3,222	61	3,165	3,226	3,222	0	3,226	3,226
Resource Protection Withdrawals								
Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
Classifications								
Recreation and Public Purposes Classifications	595	23	3,445	3,468	595	159	3,309	3,468
Other Segregations								
Other Agency Withdrawals								
Air Navigation Site (FAA)	198	0	198	198	198	0	198	198
Camp Guernsey (Military)	0	0	5,620	5,620	0	4,712	908	5,620
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
Reclamation (USBR)	0	200	12,903	13,103	0	2,425	10,678	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90	0	0	90	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	38	319	357	357	357	0	357

Table Q-39. ALTERNATIVE D - SALABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE D SALABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
CLOSED TO MINERAL MATERIAL DISPOSAL				
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River ACEC / SRMA	2,239	381	5,673	6,054
NO SURFACE OCCUPANCY (NSO) EFFECTIVELY CLOSING AREAS TO MINERAL MATERIAL DISPOSAL				
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	5,697	31,593	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	1,812	18,867	20,679
NSO ¼ mile of Ferruginous Hawk and Golden Eagle ANS	2,091	0	2,093	2,093
NSO VRM Class II	205,542	0	465,688	465,688
Special Designations and Other Management Areas				
NSO within Jackson Canyon ACEC	3,938	125	10,979	11,104

Table Q-40. ALTERNATIVE D - SALABLE MINERALS
Gypsum Development Potential and Limestone Development Potential

Description	ALTERNATIVE D SALABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
CLOSED TO MINERAL MATERIAL DISPOSAL								
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River ACEC/SRMA	2,239	365	5,689	6,054	2,239	115	5,939	6,054
NO SURFACE OCCUPANCY (NSO) EFFECTIVELY CLOSING AREAS TO MINERAL MATERIAL DISPOSAL								
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	580	3,213	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	226	2,269	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	940	19,739	20,679	6,431	1,817	18,862	20,679
NSO ¼ mile of Ferruginous Hawk and Golden Eagle ANS	2,091	0	2,093	2,093	2,091	0	2,093	2,093
NSO VRM Class II	205,542	45,533	420,155	465,688	205,542	312	465,376	465,688
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104

Table Q-41. ALTERNATIVE E (Preferred Alternative) - LEASABLE MINERALS AND RENEWABLE ENERGY
Conventional Oil and Gas Development Potential

Description	ALTERNATIVE E (Preferred Alternative) LEASABLE MINERALS AND RENEWABLE ENERGY						
	Conventional Oil and Gas Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
NO LEASING							
BLM Closures							
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,879	0	0	116	146,554	21,716	168,386
Sand Hills SMA	17,633	0	355	17,278	0	0	17,633
South Bighorns/Red Wall ACEC/SMA	55,945	0	0	1,535	74,378	0	75,913
Other Agency Closures							
Camp Guernsey (Military) plus expanded area	6,187	0	0	0	11,850	0	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	0	0	940	0	940
Naval Petroleum Reserve No. 3 (DOE)	0	733	0	8,591	0	0	9,324
NO SURFACE OCCUPANCY (NSO)							
Special Status Species ½ to 1 mile of known or discovered Bald Eagle nests	241	0	0	790	1,705	0	2,495
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	3,793	0	3,793
NSO within Bald Eagle Roosts	14,054	0	0	15,975	21,315	0	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	790	1,705	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	2,532	15,935	2,212	20,679
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	8,073	492	229	0	7,352	0	8,073
NSO VRM Class II	367,151	0	10,957	52,524	687,140	65,689	816,310
Special Designations and Other Management Areas							
NSO within Jackson Canyon ACEC	3,938	0	0	0	11,104	0	11,104
NSO in Cedar Ridge TCP	3,372	0	3,501	581	0	0	4,082
NSO in North Platte River ACEC/SRMA	2,302	0	0	574	5,436	1,049	7,059
South Bighorns/Red Wall ACEC - NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	0	3,464	45,286	0	48,750

Table Q-42. ALTERNATIVE E (Preferred Alternative) - LEASABLE MINERALS AND RENEWABLE ENERGY
Coalbed Natural Gas Development Potential

Description	ALTERNATIVE E (Preferred Alternative) LEASABLE MINERALS AND RENEWABLE ENERGY						
	CBNG Development Potential						
	BLM Administered Surface Acres	Federal Mineral Estate					
		High	Moderate	Low	Very Low	None	TOTAL
NO LEASING							
BLM Closures							
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,879	0	0	0	0	168,386	168,386
Sand Hills SMA	17,633	0	0	0	1,016	16,617	17,633
South Bighorns/Red Wall ACEC/SMA	55,945	0	0	0	0	75,913	75,913
Other Agency Closures							
Camp Guernsey (Military) plus expanded area	6,187	0	0	0	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	0	0	0	940	940
Naval Petroleum Reserve No. 3 (DOE)	0	0	0	0	0	9,324	9,324
NO SURFACE OCCUPANCY (NSO)							
Special Status Species: ½ to 1 mile of known or discovered Bald Eagle nests	241	0	0	0	0	2,495	2,495
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	0	0	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	0	0	8,804	28,486	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	0	0	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	0	0	1,114	19,565	20,679
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	8,073	0	0	492	229	7,352	8,073
NSO VRM Class II	367,151	0	0	5,421	9,571	801,318	816,310
Special Designations and Other Management Areas							
NSO within Jackson Canyon ACEC	3,938	0	0	0	0	0	0
NSO in Cedar Ridge TCP	3,372	0	0	0	3,003	1,079	4,082
NSO in North Platte River ACEC/SRMA	2,302	0	0	0	0	7,059	7,059
South Bighorns/Red Wall ACEC - NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	0	0	0	48,750	48,750

Table Q-43. ALTERNATIVE E (Preferred Alternative) - LEASABLE MINERALS AND RENEWABLE ENERGY
Wind Power Classification

Description	ALTERNATIVE E (Preferred Alternative) LEASABLE MINERALS AND RENEWABLE ENERGY Wind Power Classification Federal Surface 1 None	2 Marginal	3 Fair	4 Good	5 Excellent	6 Outstanding	7 Superb	TOTAL
NO LEASING								
BLM Closures								
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	583	22,796	64,446	41,772	12,889	21,396	4,504	168,386
Sand Hills SMA	0	0	0	3,046	14,432	155	0	17,633
South Bighorns/Red Wall ACEC/SMA	0	10,994	35,703	15,094	4,571	7,800	1,751	75,913
Other Agency Closures								
Camp Guernsey (Military) plus expanded area	844	4,613	4,972	1,421	0	0	0	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	149	0	0	0	0	149
Naval Petroleum Reserve No. 3 (DOE)	0	0	5,531	3,724	69	0	0	9,324
NO SURFACE OCCUPANCY (NSO)								
Special Status Species: ½ to 1 mile of known or discovered Bald Eagle nests	45	902	420	1,128	0	0	0	2,495
NSO on certain parcels of Muddy Mountain elk crucial winter range.	0	0	113	115	231	1,291	2,043	3,793
NSO within Bald Eagle Roosts	343	6,375	11,026	9,403	4,259	5,020	864	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	45	902	420	1,128	0	0	0	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	321	7,387	8,091	3,591	1,199	90	0	20,679
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	228	584	5,189	2,072	0	0	0	8,073
NSO VRM Class II	11,741	154,534	343,169	167,754	90,708	42,197	6,207	816,310
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	343	3,485	2,651	1,512	1,220	1,326	567	11,104
NSO in Cedar Ridge TCP	267	2,232	1,451	132	0	0	0	4,082
NSO in North Platte River ACEC/SRMA	29	2,429	2,730	1,589	264	18	0	7,059
South Bighorns/Red Wall ACEC - NSO within ½ mile of Red Wall/Gray Wall complex	0	7,965	31,427	8,795	563	0	0	48,750

Table Q-44. ALTERNATIVE E (Preferred Alternative) - LEASABLE MINERALS AND RENEWABLE ENERGY
Trona Development Potential and Phosphate Development Potential

Description	ALTERNATIVE E (Preferred Alternative) - LEASABLE MINERALS AND RENEWABLE ENERGY							
	Trona Development Potential				Phosphate Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
NO LEASING								
BLM Closures								
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,879	0	168,386	168,386	132,879	3,917	164,469	168,386
Sand Hills SMA	17,633	0	17,633	17,633	17,633	0	17,633	17,633
South Bighorns/Red Wall ACEC/SMA	55,945	0	75,913	75,913	55,945	3,131	72,782	75,913
Other Agency Closures								
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	149	0	940	940	149	0	940	940
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
NO SURFACE OCCUPANCY (NSO)								
Special Status Species: ½ to 1 mile of known or discovered Bald Eagle nests	241	0	2,495	2,495	241	0	2,495	2,495
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,054	0	37,290	37,290	14,054	0	37,290	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	0	20,679	20,679	6,431	0	20,679	20,679
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	8,073	0	8,073	8,073	8,073	0	8,073	8,073
NSO VRM Class II	367,151	5	816,305	816,310	367,151	8,996	807,314	816,310
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	3,938	0	11,104	11,104	3,938	0	11,104	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
NSO in North Platte River ACEC / SRMA	2,302	0	7,059	7,059	2,302	0	7,059	7,059
South Bighorns/Red Wall ACEC - NSO within ½ mile of Red Wall/Gray Wall complex	35,914	0	48,750	48,750	35,914	1,360	47,390	48,750

Table Q-45. ALTERNATIVE E (Preferred Alternative) - LOCATABLE MINERALS
Uranium Development Potential

Description	ALTERNATIVE E (Preferred Alternative) LOCATABLE MINERALS			
	Uranium Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,282	0	5,805	5,805
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	55,945	0	75,913	75,913
National Historic Trails and Historic Trails				
Trails Viewshed	21,954	13,294	210,320	223,614
Resource Protection Withdrawals				
Bald Eagle Roosts	14,054	0	37,290	37,290
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,824	0	169,580	169,580
Fremont Canyon	1,180	0	1,261	1,261
Muddy Mountain EEA	1,434	0	1,212	1,212
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	11	79	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	147	210	357

Table Q-46. ALTERNATIVE E (Preferred Alternative) - LOCATABLE MINERALS
Other Base and Precious Metals Development Potential

Description	ALTERNATIVE E (Preferred Alternative) LOCATABLE MINERALS			
	Other Base and Precious Metals Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,282	0	5,805	5,805
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	0	11,104	11,104
North Platte River Protective Withdrawal	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	55,945	0	75,913	75,913
National Historic Trails and Historic Trails				
Trails Viewshed	21,954	0	223,614	223,614
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	372	36,918	37,290
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,824	0	169,580	169,580
Fremont Canyon	1,180	0	1,261	1,261
Muddy Mountain EEA	1,434	0	1,212	1,212
Classifications				
Recreation and Public Purposes Classifications	595	0	3,468	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	0	13,103	13,103
Spook Site Uranium Mill Tailings (DOE)	0	90	0	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	357	0	357

Table Q-47. ALTERNATIVE E (Preferred Alternative) - LOCATABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE E (Preferred Alternativae) LOCATABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations				
Special Designations and Other Management Area Withdrawals				
Alcova Fossil Area	5,282	2,248	3,557	5,805
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River Protective Withdrawal	3,222	1,160	2,066	3,226
Sand Hills	17,633	0	17,633	17,633
South Bighorns/Red Wall	55,945	0	75,913	75,913
National Historic Trails and Historic Trails				
Trails Viewshed	21,954	5,063	218,551	223,614
Resource Protection Withdrawals				
Bald Eagle Roosts	14,504	5,697	31,593	37,290
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,824	5,589	163,991	169,580
Fremont Canyon	1,180	0	1,261	1,261
Muddy Mountain EEA	1,434	127	1,085	1,212
Classifications				
Recreation and Public Purposes Classifications	595	168	3,300	3,468
Other Segregations				
Other Agency Withdrawals				
Air Navigation Site (FAA)	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324
Reclamation (USBR)	0	234	12,869	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	357	0	357

Table Q-48. ALTERNATIVE E (Preferred Alternative) - LOCATABLE MINERALS
Gypsum Development Potential Limestone Development Potential

Description	ALTERNATIVE E (Preferred Alternative) - LOCATABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
BLM Withdrawals, Classifications, and Other Segregations								
Special Designations and Other Management Area Withdrawals								
Alcova Fossil Area	5,282	442	5,363	5,805	5,282	0	5,805	5,805
Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River Protective Withdrawal	3,222	61	3,165	3,226	3,222	0	3,226	3,226
Sand Hills	17,633	0	17,633	17,633	17,633	0	17,633	17,633
South Bighorns/Red Wall	55,945	53,624	22,289	75,913	55,945	0	75,913	75,913
National Historic Trails and Historic Trails								
Trails Viewshed	21,954	1,905	221,709	223,614	21,954	3,159	220,455	223,614
Resource Protection Withdrawals								
Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,824	45,006	124,574	169,580	132,824	10,553	159,027	169,580
Fremont Canyon	1,180	2	1,259	1,261	1,180	156	1,105	1,261
Muddy Mountain EEA	1,434	0	1,212	1,212	1,434	0	1,212	1,212
Classifications								
Recreation and Public Purposes Classifications	595	23	3,445	3,468	595	159	3,309	3,468
Other Segregations								
Other Agency Withdrawals								
Air Navigation Site (FAA)	198	0	198	198	198	0	198	198
Camp Guernsey (Military) plus expanded area	6,187	0	11,850	11,850	6,187	7,429	4,421	11,850
Fort Laramie National Historic Site (NPS) plus expanded area	0	0	940	940	0	0	940	940
National Wildlife Refuge (USFWS)	0	0	7,458	7,458	0	0	7,458	7,458
Naval Petroleum Reserve No. 3 (DOE)	0	0	9,324	9,324	0	0	9,324	9,324
Reclamation (USBR)	0	200	12,903	13,103	0	2,425	10,678	13,103
Spook Site Uranium Mill Tailings (DOE)	0	0	90	90	0	0	90	90
UMETCO Gas Hills Uranium Mill Tailings (DOE)	357	38	319	357	357	357	0	357

Table Q-49. ALTERNATIVE E (Preferred Alternative) - SALABLE MINERALS
Bentonite Development Potential

Description	ALTERNATIVE E (Preferred Alternative) SALABLE MINERALS			
	Bentonite Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL
CLOSED TO MINERAL MATERIAL DISPOSAL				
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,879	5,550	162,836	168,386
Cedar Ridge TCP	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	125	10,979	11,104
North Platte River ACEC / SRMA	2,250	407	6,652	7,059
Sand Hills SMA	17,633	0	17,633	17,633
South Bighorns/Red Wall SMA	55,945	0	75,913	75,913
NO SURFACE OCCUPANCY (NSO) EFFECTIVELY CLOSING AREAS TO MINERAL MATERIAL DISPOSAL				
Special Status Species ½ to 1 mile of known or discovered Bald Eagle nests	241	0	2,495	2,495
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	5,697	31,593	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	1,812	18,867	20,679
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	7,573	0	11,451	11,451
NSO VRM Class II	367,151	106,196	710,114	816,310
Special Designations and Other Management Areas				
NSO within Jackson Canyon ACEC	3,938	125	10,979	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082
NSO in North Platte River ACEC / SRMA	2,250	407	6,652	7,059
South Bighorns/Red Wall ACEC - ½ mile of the Red Wall/Gray Wall complex	35,914	721	48,029	48,750

Table Q-50. ALTERNATIVE E (Preferred Alternative) - SALABLE MINERALS
Gypsum Development Potential Limestone Development Potential

Description	ALTERNATIVE E (Preferred Alternative) SALABLE MINERALS							
	Gypsum Development Potential				Limestone Development Potential			
	BLM Administered Surface Acres	Federal Mineral Estate			BLM Administered Surface Acres	Federal Mineral Estate		
		High to Moderate	Low to None	TOTAL		High to Moderate	Low to None	TOTAL
CLOSED TO MINERAL MATERIAL DISPOSAL								
Fragmentation Blocks 13,14,15 and modified boundaries of blocks 3,5,8,11,16	132,879	44,689	123,697	168,386	132,879	10,479	157,907	168,386
Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
North Platte River ACEC / SRMA	2,250	329	6,730	7,059	2,250	114	6,945	7,059
Sand Hills SMA	17,633	0	17,633	17,633	17,633	0	17,633	17,633
South Bighorns/Red Wall SMA	55,945	53,624	22,289	75,913	55,945	0	75,913	75,913
NO SURFACE OCCUPANCY (NSO) EFFECTIVELY CLOSING AREAS TO MINERAL MATERIAL DISPOSAL								
Special Status Species: ½ to 1 mile of known or discovered Bald Eagle nests	241	0	2,495	2,495	241	226	2,269	2,495
NSO on certain parcels of Muddy Mountain elk crucial winter range.	166	580	3,213	3,793	166	0	3,793	3,793
NSO within Bald Eagle Roosts	14,504	4,047	33,243	37,290	14,504	2,175	35,115	37,290
NSO ¼ to 1 mile of Bald Eagle Nests (RUN ON 1 MILE)	241	0	2,495	2,495	241	226	2,269	2,495
NSO ¼ mile of Bald Eagle Feeding Areas	6,431	940	19,739	20,679	6,431	1,817	18,862	20,679
NSO ½ mile of Ferruginous Hawk and Golden Eagle ANS	7,573	0	11,451	11,451	7,573	0	11,451	11,451
NSO VRM Class II	367,151	95,311	720,999	816,310	367,151	26,712	789,598	816,310
Special Designations and Other Management Areas								
NSO within Jackson Canyon ACEC	3,938	3,477	7,627	11,104	3,938	1,169	9,935	11,104
NSO in Cedar Ridge TCP	3,372	0	4,082	4,082	3,372	0	4,082	4,082
NSO in North Platte River ACEC / SRMA	2,250	329	6,730	7,059	2,250	114	6,945	7,059
South Bighorns/Red Wall ACEC - ½ mile of the Red Wall/Gray Wall complex	35,914	39,695	9,055	48,750	35,914	0	48,750	48,750

ACEC	Area of Critical Environmental Concern	GIS	Geographic Information Systems
BLM	Bureau of Land Management	MACTAA	Management Action Common to all Alternatives
DOE	U.S. Department of Energy	NSO	No Surface Occupancy
EEA	Environmental Education Area	TCP	Traditional Cultural Property
EIS	Environmental Impact Statement	USBR	U.S. Bureau of Reclamation
FAA	Federal Aviation Administration	USFWS	U.S. Fish and Wildlife Service

CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX R

Clarification of Off-Highway Vehicle Designations and Travel Management in the Bureau of Land Management Land Use Planning Process

Appendix R
Clarification of Off-Highway Vehicle Designations and Travel Management in the Bureau of Land Management Land Use Planning Process

In conformance with the Bureau of Land Management (BLM) Washington Office Instruction Memorandum No. 2004-005 (October 1, 2003), the planning area will be divided into areas that are open, limited, or closed to off-highway vehicle (OHV) travel. Those areas that are designated limited may have seasonal restrictions or travel limitations to either existing or designated roads and vehicle routes, or any combination of these.

Road and Vehicle Route Designation Process for Limited to Designated OHV Areas

During the travel management planning period, the following will occur:

- Interim management guidelines for identification of the road and vehicle route network, including signing and maintenance, will be defined.
- Additional data needs and collection strategy will be outlined.
- A clear planning sequence, including public collaboration, criteria, and constraints for subsequent road and vehicle route selection and identification, will be established with a schedule not to exceed 5 years.
- Collaboration on designation of roads and vehicle routes will occur, consistent with the goals, objectives, and other considerations described in the Resource Management Plan (RMP), according to the above planning sequence.
- A Travel Management Implementation Plan will be written.
- Signs and barriers will be installed where needed, and reclamation according to the plan will occur.
- Desirable roads may be reopened after repairs, recovery, or adequate mitigation has occurred.

Until the designation process is completed, travel in limited to designated areas (LDA) will remain limited to existing roads and vehicle routes. Some portions of LDAs may receive other designations during the planning process outlined above. Travel on parcels of public land not having legal public access will remain limited to existing roads and vehicle routes.

The LDAs will be divided into geographic sub-areas in which specific roads and vehicle routes will be designated open to OHV travel. Geographic sub-areas and their order of consideration will be determined based on criteria such as current OHV use, areas with sensitive resources, and areas with special designations (i.e., Areas of Critical Environmental Concern [ACEC], wildlife habitat management areas, and Special Management Areas [SMA]). Roads and vehicle routes that are designated as open may have further restrictions placed on their use.

During the planning process, teams made up of the BLM, cooperating agencies, and members of the public will be used to ensure resource concerns and OHV user needs are properly addressed. Maps will be available to the teams that include all known roads to aid input for additional roads and vehicle routes to be considered for designation as open to OHV use. In addition to the sub-areas in general, these teams will address roads and vehicle routes in specific areas that have ongoing resource problems.

Criteria for road closures include the following:

- OHV use is causing, or will cause, considerable adverse impacts.
- A road or vehicle route poses a threat to public safety.
- Road and vehicle route density is adversely impacting resources.
- Closure is necessary for desired future conditions for access.
- Closure is necessary for visual resource protection.
- Closure is necessary for sensitive habitat management.

The BLM recognizes that designated OHV recreation sites play a vital role in satisfying a portion of the recreation experience for OHV enthusiasts. These areas include motocross tracks and novice riding areas. The Poison Spider OHV Park is open to all types of motorized use. These sites would be managed to reduce the possibilities for inappropriate activities on adjacent public and private lands. Management of these sites will include education, public outreach, and displaying appropriate signage.

Instruction Memorandum WY-2005-034 (March 10, 2005)

Travel Management Guidelines for the Public Lands in Wyoming

Management of the travel and transportation system is becoming increasingly important as development and use of the public lands progresses into the 21st century. Increasing demands for all uses of the public lands, and the crucial role the travel and transportation system plays has caused us to revise the guidelines for travel management in Wyoming.

This Instruction Memorandum introduces the updated travel management guidelines. While the major focus of travel management is on Off-Highway Vehicle (OHV) Management, these guidelines apply to all forms of travel and transportation, including non-motorized and mechanized forms of transportation.

Travel management affects all resource management programs. Although OHV designations have traditionally been linked to the recreation management program they affect all programs, including minerals and range management. Accordingly, all programs should participate effectively in travel management planning.

These guidelines are an outgrowth of the OHV Policy that the Bureau of Land Management in Wyoming has relied on since the early 1980s. The previous policy is outdated and fails to address problems and issues commonly encountered by Field Offices today. The intent is that these updated guidelines will improve consistency between Field Offices and help Field Offices address 21st century travel and transportation problems and issues.

Most travel management planning occurs in RMP or in activity plans called for by RMP decisions. The guidelines include hypothetical language for RMP decisions. Although they are not intended to be used as actual templates, they do provide suggestions how to craft RMP decisions for OHV Designations.

INTRODUCTION

Travel management planning incorporates comprehensive travel management, in addition to making required OHV decisions in land use plans (See BLM Manual Handbook H-1610-1 LAND USE PLANNING HANDBOOK). Comprehensive travel management involves consideration of public access, resource management, and regulatory needs through land use planning. It encompasses access needs as well as the effects of and interactions among all forms of travel, including motorized; mechanized; and non-motorized/non-mechanized travel; equestrian and other livestock; walking, bicycling, boat and other travel modes.

The success of travel management planning depends on the degree to which the planning effort consults and coordinates with the general public and with state and local government.

We recommend using road and trail information from all available sources, including states, tribal governments, counties, other agencies, interest groups and individuals. Involving the public in the collection and analysis of transportation data can be an important factor in achieving transportation management goals.

The Relationship between Travel Management Planning and On-going Development and Use of the Public Lands.

The overall goal of travel management planning is to provide for the travel and transportation needs of all resource uses for a given area during the life of the RMP. Accordingly, to meet resource management and use needs over time, travel management planning:

- Incorporates needs for public land access into the planning process.
- Establishes an appropriate travel and transportation network that supports all authorized uses of the public lands.
- Provides for regulation of travel on the public lands through OHV or similar designations.
- Provides for changing transportation needs as resource use and development progresses over time on the public lands.

The travel and transportation network is established in the RMP and/or subsequent activity plans. OHV designations provide for regulation of travel on the public lands. As new resource use and development authorizations are granted, changes to the transportation system are automatically incorporated into the existing management framework. For example, as oil and gas development continues as provided for in the RMP, the transportation system that accompanies this development is automatically incorporated under the umbrella of existing management.

Travel management decisions are made at the RMP-level since they are concerned with allocating lands for certain uses. The transportation system affects all resource uses. It provides access for mineral development and production; it facilitates livestock grazing and a host of other commercial uses of the public lands. It affects the kind of recreation experience BLM-administered lands provide.

Goal of These Guidelines

The goal is to establish consistency between BLM field offices and promote environmentally responsible management of the entire travel and transportation system. It encompasses Off-Highway Motor Vehicle management, non-motorized trail and transportation systems, as well as mechanized means of travel. These guidelines are an outgrowth of BLM Handbook H-1601-1 Land Use Planning Handbook, the National OHV Strategy, and the National Mountain Bicycling Strategic Action Plan. This document replaces and expands Wyoming BLM's February 22, 1984, Off-Road Vehicle Policy and serves to implement IM No. 2004-005. OHV use of the public lands is one of the most important issues facing public land managers today and will only become more difficult over time.

Authority

Federal Land Policy & Management Act of 1976 (43 U.S.C. 1701 et seq.); the Taylor Grazing Act (43 U.S.C. 315a); the Endangered Species Act (16 U.S.C. 1531 et seq.); the Wild & Scenic Rivers Act (16 U.S.C. 1281c); the Land & Water Conservation Fund Act (16 U.S.C 460 1-6a); the National Trails System Act (16 U.S.C. 1241 et seq.); Executive Order 11644 (Use of Off-Road Vehicles on the Public Lands), 37 Federal Register 2877, 3 CFR part 74, 332, as amended by Executive Order 11989 42 Federal Register 26959 (May 25, 1977), and Instruction Memorandum No. 2004-005.

The Travel and Transportation System

The travel and transportation system consists of all travel routes of all types that function to provide access and use of the public lands. This includes the entire spectrum of roads and trails from foot paths and un-maintained two-tracks to constructed and surfaced roads which receive regular maintenance.

There are two broad categories of travel routes. The first is the broad collection of roads, trails, and travel ways that are out there on the public lands. Most roads, trails, and travel ways are user-created and receive no regular maintenance, but they are crucial to providing for access and use of the public lands. These travel ways are not public roads by definition, but often provide crucial public access to the public lands. While these roads play an important role in public land access and use, they are not considered assets in a formal sense and few if any are included in the Facility Asset Management System (FAMS). Over 90 percent of all roads that exist on the public lands are of this type.

The second category of roads is part of what is known of as the Transportation Plan. Roads on the Transportation Plan are the official network of BLM roads which, in combination with County roads and State Highways, form the basic transportation and public land access system for many Field Offices. Roads on the Transportation Plan are administrative roads which are improved and maintained and which provide public access to large blocks of public land. The BLM spends public funds on easement acquisition and maintenance for roads that are on the Transportation Plan. All roads on the Transportation Plan are included in FAMS. Constructed and maintained trails are also included in FAMS. This category makes up no more than 10 percent of all roads on the public lands.

Some field offices (e.g., Rawlins Field Office) have an extensive network of formal numbered BLM roads while others (e.g., Casper, Newcastle, and Buffalo Field Offices) have few or none.

The Role of Engineering in Travel Management Planning

The role of engineering in the Field Offices will remain fundamentally unchanged as the BLM moves toward more comprehensive Travel Management Planning. At the present time, the role of engineering is to design and maintain roads and to participate in transportation planning efforts at the Field Office level. Transportation planning at the present time is centered around the Transportation Plan or in planning and designing travel and transportation routes and trails.

Under the broader topic of Travel Management, which includes the entire spectrum of transportation and travel systems, the engineering function would have appropriate involvement in planning and management of the entire travel and transportation system for a given Field Office.

The Planning Process

Travel management decisions are made in the RMP. The process consists of inventory, identification and analysis of issues, formulation and analysis of alternatives, and the selection of a final land use plan, all done with substantial public involvement in the entire process. The BLM Planning Process is described in BLM Manual Handbook H-1601-1 LAND USE PLANNING HANDBOOK.

I. OFF-HIGHWAY MOTOR VEHICLE DESIGNATIONS

OHV designations for public lands are formulated in RMPs. These guidelines provide direction for establishing, modifying, and implementing OHV designations to meet resource management objectives. OHV mapping and signing guidance, public education, enforcement, monitoring, and long-term OHV management direction are also included.

OHV designations are updated and/or revised whenever an RMP undergoes a major revision. OHV designations may be updated or revised any time a Field Office determines that existing designations are outdated or no longer address prevailing conditions in the field. In such cases revisions are accomplished through maintenance actions or amendments to the existing RMP.

All the public lands in Wyoming were designated as Open, Limited, or Closed to Off-Road Vehicle use when the existing RMPs were completed in the mid 1980s and early 1990s. About 97 percent of lands were placed in the "Limited" category. Most lands were in "Limited to Existing Roads and Vehicle Routes," but some were placed in the "Limited to Designated Roads" category.

The current OHV management objective is to develop designations that provide for access and use of the public lands while protecting the lands and resources from damage and overuse. Public involvement ensures that the BLM's OHV designations and implementation actions reflect the public interest.

The OHV section provides direction for managing motor vehicles. The BLM in Wyoming uses the term "Off-Highway Vehicle" as opposed to "Off-Road Vehicle." Both terms are consistent with the definition for an off-road vehicle provided in 43 CFR 8340.0-5 and referenced in 43 CFR 3809, Surface Management Regulations. The term "Off-Highway Vehicle" is a modern term in use throughout the western United States and will be used from now on in Wyoming. Motor vehicle use on the public lands away from public highways or county roads is subject to BLM management; thus, the term "Off-Highway."

All public lands administered by the BLM must be designated as Open, Limited, or Closed to Off-Road Vehicle use (43 CFR 8342.1). The regulations require the BLM to protect soil, wildlife, wildlife habitat, cultural, and vegetative resources. OHV designations are based on sound resource information. The OHV policy for BLM-administered public lands in Wyoming anticipates that the "limited" designation will be used in most situations.

A. OHV Designation Categories

Field Offices may designate public lands as "Open," "Limited," or "Closed" to OHV use. Designations will be made in RMP.

1. Open:

In the "Open" category all types of vehicle use is permitted at all times anywhere in the area. However, motor vehicles may not be operated in a manner causing or likely to cause significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural or vegetative resources or other authorized uses of the public lands (See 43 CFR 8341). Accordingly, in Open areas, driving off-road to perform necessary tasks, for recreational activities, or any other purpose, is allowed. The experience in the western United States suggests that "Open" designations encourage route proliferation and unlimited cross country driving and is causing degradation of the lands and resources. It is the policy of the BLM in Wyoming to limit the use of "Open" designations to areas suitable for unlimited off-road driving such as sand dune areas that are essentially devoid of vegetation.

2. Limited:

This category includes several options including:

a. Vehicle use is allowed only on roads and trails which were in existence prior to the date of publication of the Federal Register notice that announces the designation. Exceptions allow for limited vehicle travel off existing roads and trails to accomplish necessary tasks and certain leisure-time activities up to 300 feet from roads only if such travel does not cause resource damage, create new roads, or extend existing roads. Random cross-country travel off existing roads within and beyond the 300 foot limit is not allowed. The creation of new routes or extending or widening existing routes is not allowed without agency authorization.

b. Vehicle travel is allowed only on designated roads and trails, i.e., a road network designated by the BLM. Exceptions allow for limited vehicle travel off designated roads and trails to accomplish necessary tasks as defined elsewhere in these guidelines. Also, off-road travel to accommodate certain recreational activities such as dispersed camping up to 300 feet from roads only if such travel does not cause resource damage, create new roads, or extend existing roads. Until such time as this designation is fully implemented, vehicle travel is limited to existing roads and trails as described in "a" above.

   On "designated" roads a white arrow or other appropriate sign will be used to identify the open road.

   Various actions can be taken to close roads not designated as open. They must be sufficient to ensure that non-designated roads are no longer available for motorized use. Such means could include removal of the road from the travel map, a closure with a gate, signing the road as closed and allowing it to re-vegetate naturally, or mechanically reclaiming and re-vegetating it. Field managers will use appropriate means for a given situation. Roads or trails that do not support a management objective should be eliminated.

c. Vehicle travel is limited by type of vehicle (ATV, motorcycle, vehicles less than 48 inches in width, etc.)

   Examples of possible designations:

   1. Vehicle route is limited to four wheel drive vehicles only.
   2. Vehicle route is limited to motorcycles only.
   3. Vehicle route is limited to ATVs only.

d. Vehicle travel is limited to time and season of use. Seasonal closure to type(s) of motor vehicle or all motor vehicles (the dates and times of the closure are indicated). This is often used to protect wildlife winter range and wintering wildlife.

e. Recreational OHV use areas (sometimes referred to as OHV Play Areas). Field Offices may, where appropriate, seek out and designate areas of public lands suitable for concentrated recreational OHV use. Such areas could allow unlimited ATV, motorcycle, and other 4x4 vehicles such as "rock crawlers" under specific management guidelines or prescriptions. These could allow substantial surface disturbance or construction activities to enhance the interest and challenge of the opportunity being provided. The "Open" category may also be appropriate for such areas.

The "Limited" category has the following exemption:

Unless posted otherwise, driving up to 300 feet away from the edge of the road for such leisure-time activities as recovering harvested big game animals, dispersed camping, or picnicking is allowed, in all "limited" category areas as long as it doesn't cause resource damage, create new roads, or impose a safety hazard to others. See definitions below for additional information. This exemption is in addition to the Off-Road driving allowance to perform Necessary Tasks (see "L" below) associated with permitted or authorized activities. This exemption does not apply to Wilderness Study Areas.

3. Closed:

The area is closed to motor vehicles. Access by means other than motor vehicles may be allowed. The Field Manager may only allow motor vehicle access on a case-by-case basis or for emergencies. Decisions to close areas to motorized use must be carefully coordinated with all resource programs such as minerals, range, realty, etc.

B. Establishing OHV Designations

1. Public Involvement – A substantial public involvement process is crucial to the success of OHV designations. Federal, State, county, local agencies, local landowners, OHV users, and the public in general must be involved.

2. Location of Roads and Trails – Approval of an RMP, or a plan revision or amendment, constitutes formal designation of OHV use areas. As quoted from 43 CFR 8342.1, the following apply to the location of roads and trails:

    a. Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.

    b. Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.

    c. Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

    d. Areas and trails shall not be located in designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

C. Factors to Consider When Developing OHV Designations

Consider the following when developing OHV designations:

- Are high priority resources such as crucial wildlife habitat present?
- Is visitor use high or low?
- What are the travel and transportation needs in the area?
- Are needs and desires of public land users being met?
- Are threats to important resources present?
- Is there evidence of OHV- related problems?
- Are resource conflicts present?
- Are critical resources such as T&E or WSAs present?
- What are management objectives for the area?
- How would OHV proposals affect activity and experience opportunities in the area?
- What benefits or outcomes would accrue from various options?
- Are other issues or problems present? Noxious weeds, etc?
- Are sufficient data available to support the decision?
- Finally, is it realistic? Are budget and manpower resources sufficient to implement this designation?

D. Priorities for OHV Designations

Field Offices should consider using the designation "Limited to Designated roads and Trails" in high priority areas such as Special Recreation Management Areas (SRMAs), Crucial Wildlife Winter Ranges,

or other areas where the BLM is prepared to provide a more intensive management effort. On the other hand, the designation: "Limited to Existing Roads and Trails" may be more appropriate for Extensive Recreation Management Areas or other areas where the BLM provides a more custodial level of management.

E. OHV Access for Persons with Disabilities

Section 504 of the Rehabilitation Act (PL 93-112 as amended) requires Federal land managing agencies to provide reasonable opportunities for access for persons with disabilities. Accordingly, during hunting seasons, individuals possessing a valid WGFD "Permit for Hunters with Qualifying Disabilities" will be allowed to use an OHV to retrieve harvested big game and trophy game animals in Limited areas beyond the 300 foot travel zone without any additional authorization, providing resource damage or the creation of new roads do not occur.

In addition, Field Managers will consider requests by persons with disabilities for authorization for cross-country travel for the purposes of gaining access to the public lands for recreational purposes. These requests will be considered case by case. Decisions will be based on a combination of factors including need, other available opportunities, resource management considerations, and the assurance that the activity can be carried out without causing resource damage. If OHV use authorizations are granted, the above criteria will be included in the written authorization.

F. Implementation of OHV Designations

The BLM uses several means to implement OHV designations. The first is a signing program in the field sufficient to ensure that the public encounters enough signs to understand the regulations for any given area they may enter. The second is a series of maps and/or brochures designed to portray OHV designations. Third comes enforcement and fourth is monitoring and evaluation.

OHV Signs

Signs are designed to notify the public, in the field, of the OHV designations. They should be easy to understand, inexpensive, durable, and easy to install and replace.

Signs will be standardized. An OHV sign in the Pinedale Field Office must look the same as an OHV sign in the adjacent Kemmerer Field Office. The message on the sign may vary according to the nature of the individual OHV designation but the size, type of substrate, layout, and design should be the same.

Portal signs will be used. At points where access roads leave public highways or County roads and enter areas containing public lands, portal signs that tell what the OHV designation is for that area will be installed. A message such as: "On the public lands in this area, motor vehicle travel is limited to existing roads and trails" will appear on the sign.

For areas designated as "Limited to Existing Roads …" Field Offices will use portal signs only. Individual roads and vehicle routes need not be signed.

For areas designated as "Limited to Designated Roads…" a portal sign will be posted with a message something like: "Motor Vehicle Travel on the Public Lands in This Area is Limited to Roads and Trails Identified with A White Arrow." All designated roads will be identified with signs. The recommended sign is the white arrow. The reason for the white arrow is that it is a simple, recognizable symbol in use in the western United States. It is inexpensive, easy to install and replace, and unobtrusive when installed in the field. White arrows should be placed at entrances and intersections of all designated roads.

For road closures and closed areas, signs that state the rationale for the closure must be posted. The public will usually support reasonable measures to protect lands and resources, but will often rebel against seemingly arbitrary decisions by Federal land management agencies.

The cost to implement and maintain an extensive signing program should be carefully considered during the planning process.

Maps and Brochures

Maps and brochures can provide detailed information to the public about OHV designations. They may eventually be printed on 1:100,000-scale Surface Management Status maps. The goal is for OHV information to be available in all BLM offices throughout the State.

However, there are limitations to the 1:100,000-scale maps. There are 56 of them for the entire State and it is impossible to update and print all of them in any given year or even in several years. The cost of doing so is prohibitive. Roads, land ownership status, and other conditions in the field are constantly changing so the maps will never be completely up to date. In spite of the limitations, the maps are an excellent source of land ownership status and travel information. While they cannot be the only source of information, they are an excellent tool to help the public access and use the public lands.

Brochures for specific areas may also be published. Simple folding color brochures, printed on both sides, can adequately portray OHV designations for specific areas. These are developed by the Wyoming State Office from information provided by Field Offices. They will contain a detailed map, photographs, and narrative information about the area. The advantage of brochures is they are relatively easy to produce, they are inexpensive, and they can be updated quickly to reflect changing conditions in the field.

It is recommended that brochures be completed for priority areas where OHV travel is Limited to Designated Roads and Trails. The reason is this is a fast and inexpensive way to produce and distribute accurate maps for specific road systems. GIS capabilities in the Bureau make it possible for high quality maps and brochures to be developed in-house in a timely manner. Accurate information of this type helps enable enforcement activities.

OHV brochures will use a standard format and design. The brochure includes a description of the designation and a summary of applicable regulations. The base map could be a current 1:100,000 scale topographic map (or as near to that scale as possible) with land ownership status.

Implementation of OHV designations is more complex where a designated road network is specified. For these areas, an accurate road inventory is necessary.

Enforcement

Law enforcement is essential for successful OHV implementation and management. All Federal and State laws that apply to motor vehicle use (including the Wyoming Off-Road Recreational Vehicles Act) are subject to enforcement when OHV designations – which may include closures or restrictions – are developed through RMPs, publication of the Federal Register Notice for the RMP, Record of Decision, is required and is sufficient for legal enforcement.

When the BLM issues an order that closes or restricts the use of public lands, adequate public notification is required. For those orders to be legally enforceable and upheld in court the requirements found in 43 CFR Subpart 8364, Closures and Restrictions, must be followed.

An option for enforcement is for the BLM to enter into cooperative law enforcement agreements with state and local agencies such as the WGFD or the respective county law enforcement agencies. Other western states use these agreements successfully.

Monitoring and Evaluation

Monitoring is an integral component of OHV management as discussed in BLM Manual 8342. Field Offices should monitor the effectiveness and appropriateness of the OHV designations.

Monitoring methods can include the use of traffic counters, intercept surveys, aerial flights, the use of remote sensing observation techniques, and other tools but nothing can entirely replace simple field observations. Suggested items to monitor are:

1. User created roads or trails.
2. Effects of OHV use on wildlife.
3. Effects of OHV use on other recreation or resource uses.
4. OHV user conflicts and complaints.
5. Resource damage resulting from OHV use.
6. OHV associated private land conflicts.
7. The effects of allowing holders of a valid Permit for Hunters with Qualifying Disabilities to retrieve big and trophy game kills with an OHV.
8. Trends in the number of OHV violations and incident reports.

G. Education

The Tread Lightly and Operation Respect programs will be included in OHV implementation planning. Field Offices will initiate programs for the public that emphasize responsible OHV-use, respect for the land, resources, and private property rights. Tread Lightly! Inc. is a source of excellent educational materials that promote responsible OHV use. Better knowledge helps the public prepare for trips, enhance safety, and improve motor vehicle etiquette.

The BLM in Wyoming has used the Operation Respect program for over 20 years. This program is a public outreach initiative that promotes respect for both public and private land, provides information on access to public lands, encourages users to obtain permission from private landowners, and specifies where to get information.

Additional programs such as the BLM's Environmental Education Program, the WGFD's Hunter Stewardship Program, Hunter Safety Education Program, and the Annual Hunting and Fishing Heritage Exposition, should be utilized when possible for BLM OHV program public outreach. The Wyoming Outfitters and Guides Association can also assist the BLM with educating the public about OHV ethics. These and other avenues that promote responsible OHV use should be strengthened.

Information about regulations, penalties, consequences for irresponsible behavior, and potential impacts to resources from inappropriate use will be incorporated into the outreach program. Methods of public outreach include information postings on the BLM's website, brochures, fact sheets, news releases, and radio talk shows.

H. Wilderness Study Areas

Cross country travel by motor vehicle is not allowed in WSAs. Signs, maps, and educational efforts will be used to make the public aware that cross country travel is prohibited in WSA's except as allowed in the "Interim Management Policy for Lands Under Wilderness Review," BLM Handbook H-8550, dated 7/5/95. The 300 foot travel exception which applies to the "limited" category does not apply in WSAs. In addition, the exemption for retrieving harvested big and trophy game animals within 300 feet of an existing road or trail is not allowed in WSAs, nor is the exemption for cross-country travel for hunters with qualifying disabilities. OHV designations for lands in WSAs must conform to the Interim Management Policy for Lands Under Wilderness Review.

I. Coordination with the State of Wyoming

The BLM has entered into a partnership with the State of Wyoming, Department of State Parks and Cultural Resources, Division of State Parks and Historic Sites to share management of a segment of OHV opportunities on the public lands. The State has recently created the Wyoming Off-Road Recreational Vehicle Trails program to provide opportunities and management of ATV and motorcycle trails on the public lands. The State will assist with management by providing funding, maps, and trail building expertise. The BLM provides management expertise, the land base, and enforcement. The program is new but may be the type program needed to help meet the challenges of OHV management in the future.

J. Administrative Use

Off-road travel by BLM employees conducting official business is allowed only for necessary tasks and only if such travel does not cause resource damage or create unauthorized or unplanned roads and trails. Such travel by BLM employees must meet the same standard required of permit holders who are performing necessary tasks in conjunction with their permit or authorization. Fire fighting operations will use existing roads whenever possible.

K. OHV Decisions in Resource Management Plans

OHV designations are made in RMPs. Each decision identifies the affected area and if possible, the roads specified by the decision. If it is not possible to identify individual roads in the RMP decision, they will be identified in implementation plans within 5 years of the completion of the RMP.

The following is a suggested template for RMP Decisions regarding OHV Designations. Each example includes the basic objective, followed by a prescription that defines the actions necessary to meet the objective. OHV designations will be shown in the RMP, by OHV designation area or planning unit, on 1:100,000 scale (or as near as possible to that scale) topographic maps that show land ownership status.

1. Example of RMP Language Limiting OHV Travel to Existing Roads and Trails

Motor vehicle travel in XYZ area will be Limited to Existing Roads and Trails. (objective) (Prescription)

- Includes all Roads and trails that were in existence when the RMP was approved.
- Portal signs will be placed on main travel routes entering the area from highways or other public roads.
- Maps or brochures showing OHV designations will be published.

- Off-road travel will be allowed up to 300 feet away from roads for dispersed camping, recovering game animals, picnicking, or other uses that do not require specific authorizations or permits as long as resource damage does not occur and new routes are not created.
- Other necessary tasks that require off-road motor vehicle travel may be allowed as long as resource damage does not occur and new routes are not created. They include such activities as, but are not limited to: geophysical exploration, maintaining range improvements, surveying rights-of-way or other work-related tasks authorized by or which lead to the issuance of a permit or authorization. Necessary tasks may be allowed by the field office in advance of issuance of a formal authorization.
- Designation is effective as of the date of RMP approval/Federal Register notice.

2. Additional Language for Seasonal Closure

Motor vehicle travel is open in XYZ area from May 1 to November 30.

- This area is closed to all motor vehicles from December 1 to April 30.
- Non-motorized access/travel is authorized the entire calendar year.
- Seasonal closure to motor vehicle access is necessary to protect big game species on crucial winter range.
- Signs will be placed on all roads entering the seasonal closure area.
- Maps or brochures showing the area will be published.

The above could "overlap" parts or all of other OHV decisions. It may be appropriate to close certain roads seasonally for a variety of resource-related reasons

3. Example of RMP Language Limiting Travel to Designated Roads and Trails

Here is hypothetical RMP language for areas where Field Offices wish to limit travel to a "designated" system of roads and trails. As stated above, this designation is especially appropriate for high priority management areas such as crucial winter range or Special Recreation Management Areas (SRMAs).

Alternative A. Where we know the road system to be "designated."

Motor Vehicle Travel in XYZ area is limited to a designated network of roads and trails. When implemented, motor vehicle travel will be allowed on all roads designated as open to such travel. All other roads in the area, if any, are closed to motor vehicles.

- Signs will be placed on main travel routes entering the area.
- Signs will be placed on Individual "designated" roads in the area.
- Closed roads will be marked or will be obliterated and reclaimed.
- Maps and/or brochures will be published that show the network of authorized roads and vehicle routes.
- Travel is authorized up to 300 feet away from roads for leisure-time activities such as dispersed camping, recovering game animals, picnicking or other uses that do not require authorizations or permits as long as those activities did not cause resource damage or create new roads.
- Other necessary tasks (usually commercial in nature) that require off-road motor vehicle travel may be allowed as long as resource damage does not occur and new routes are not created. They

include such activities as, but are not limited to: geophysical exploration, maintaining range improvements, and surveying rights-of-way or other work-related tasks associated with or which lead to the issuance of a permit or authorization. Necessary tasks may be allowed by the Field Office in advance of issuance of a formal authorization.

Alternative B. Where we have yet to determine the roads to be "designated" at the time the RMP is written and approved.

Motor vehicle travel in XYZ area is limited to a designated network of roads and trails. To determine the authorized road network for the area the BLM will complete an implementation plan within 5 years of completion of this RMP. When implemented, motor vehicle travel will be allowed on all roads and trails designated open to such travel. All other roads in the area, if any, are closed to motor vehicles. Until such time as implementation plans are complete and the designations are established in the field, all motor vehicle travel is limited to existing roads and trails.

- Signs will be placed on main travel routes entering the area.
- Signs will be placed on individual "designated" roads in the area.
- Closed roads will be marked or will be obliterated and reclaimed.
- Maps and/or brochures will be published that show the network of authorized roads and vehicle routes.
- Travel is authorized up to 300 feet away from roads for leisure-time activities such as dispersed camping, recovering game animals, picnicking or other uses that do not require authorizations or permits as long as those activities did not cause resource damage or create new roads.
- Other necessary tasks (usually commercial in nature) that require off-road motor vehicle travel may be allowed as long as resource damage does not occur and new routes are not created. They include such activities as, but are not limited to: geophysical exploration, maintaining range improvements, and surveying rights-of-way or other work-related tasks associated with or which lead to the issuance of a permit or authorization. Necessary tasks may be allowed by the Field Office in advance of issuance of a formal authorization.

4. Example of RMP Language Closing Area to All Motor Vehicle Use

The XYZ area is Closed to All Motor Vehicle Use

- Motor vehicle travel may be allowed for fire fighting and emergencies only.
- Applies to all resource uses.
- Motor vehicle access allowed only by approval of the authorized officer.

5. Example of RMP Language Opening Area to All Motor Vehicle Use

The XYZ area is Open to All Motor Vehicle use under the Following Terms and Conditions:

- OHVs may be operated off-road on the public lands as long as this activity neither causes nor is likely to cause significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural, or vegetative resources or other authorized uses of the public lands.

6. Example of RMP Language for Travel Management Planning

Travel management planning is an on-going function at the Field Office level. It includes developing inventories that serve as the basis for travel and transportation decisions. It will address issues such as the need for additional access, additional roads or trails, or the need to upgrade or re-route existing roads, the need to close certain roads or the need to update or change OHV or other travel and transportation-related designations. Travel and transportation decisions will be based on resource management and development needs, public involvement, and coordination with State and local governmental agencies and the general public. It includes motorized, non-motorized, mechanized, equestrian, over-snow, and other modes of travel.

L. Necessary Tasks

Necessary tasks are actions that support commercial or industrial uses of the public lands and which need to be accomplished by a person or organization seeking or holding an authorization from the BLM. These include tasks that are sometimes accomplished without formal written approval or in advance of receiving an authorization. Numerous necessary tasks are authorized by the BLM which require off-road driving.

Managing a livestock grazing operation on the public lands is an example. Fences and other range improvements need to be maintained, salt is placed out for livestock consumption, and sick cattle are attended to. These are typical tasks that are necessary to manage livestock grazing operations authorized under a grazing permit issued by the BLM and which may require off-road travel.

Other examples that may require off-road driving include surveying or staking work associated with filing a Notice of Intent (NOI) to conduct geophysical exploration activities, or field reconnaissance and survey work in advance of a right-of-way action such as a pipeline. In these cases the work done by the proponent leads to the issuance of a permit or authorization and may be authorized after initial contact with the field office. Another example is mineral activities defined as casual use (except in areas designated as Closed) by 43 CFR 3809 – Surface Management Regulations.

II. PLANNING FOR NON-MOTORIZED & NONMECHANICAL TRAVEL

There will always be a need for non-motorized travel and transportation systems on the public lands. This mainly includes opportunities for travel by foot or horseback.

Depending on the management objective, travel by non-motorized means may be preferred. This could be especially true in areas where the management objective is to provide a semi-primitive, non-motorized or primitive experience.

Planning for non-motorized and non-mechanized transportation will be accomplished within the BLM planning system using:

- accepted scientific principles and procedures
- reliable and accurate inventory and monitoring data
- knowledge from local users
- political and financial (budget) realities
- laws, regulations and valid existing rights
- comprehensive public involvement, and
- professional judgment.

III. PLANNING FOR SNOWMOBILE USE OF THE PUBLIC LANDS

Snowmobile trails are managed cooperatively by the State of Wyoming and the landowner or land manager responsible for the lands on which the trails are located. Typically, the USFS or the BLM, under the terms and conditions of a Memorandum of Understanding, authorizes the State of Wyoming to establish and maintain the snowmobile trails.

Decisions regarding the establishment and management of snowmobile trails are made through the BLM planning process.

IV. PLANNING FOR MOUNTAIN BICYCLING ON THE PUBLIC LANDS

Mountain bicycling is recognized as a legitimate recreational use of the public lands. Planning for mountain bicycling will be accomplished within the BLM planning system using:

- accepted scientific principles and procedures
- reliable and accurate inventory and monitoring data
- knowledge from local users
- political and financial (budget) realities
- laws, regulations and valid existing rights
- comprehensive public involvement, and
- professional judgment.

DEFINITIONS

Resource Damage: Defined as leaving signs of vehicle use such as wheel ruts in wet meadows, visual scars on hillsides or soil erosion. Additional examples include surface disturbance that causes the loss of vegetative cover, degradation of wildlife habitat, the creation of new roads, and the introduction of noxious weeds. Damage to vegetation also includes crushing or uprooting trees and shrubs. The determination of whether resource damage has occurred is left to the discretion of Field Managers and law enforcement personnel.

Dispersed Recreation: Recreational activities are considered "dispersed" when they are not dependent on developed facilities such as campgrounds, playgrounds, or developed park areas other than roads and trails. Roads and trails usually serve to disperse recreational activities into undeveloped or back-country settings. User density is often low relative to developed or intensive recreation. Developments such as access points, portal areas, trailheads, staging areas and campgrounds often facilitate dispersed recreation. Activities thought of as examples of dispersed recreation include but are by no means limited to hunting, hiking, and off-highway driving. Dispersed uses, as defined here, are usually non-commercial.

Allowable Off-Road Driving: Certain activities occur on BLM-administered lands that may not require specific authorizations and that may not necessarily cause any appreciable disturbance or damage to the public lands. Recreational activities are examples. Dispersed camping, parking, and picnicking are examples of activities that sometimes require a degree of off-road driving. Dispersed camping in undeveloped areas is an activity that has been allowed on BLM-administered lands since before the BLM came into existence. These are activities that can normally be accomplished within a minimal distance of roads and vehicle trails. Also included is driving off-road to pick up a harvested big game animal.

The public is allowed to pursue these activities up to 300 feet away from roads and trails as long as such activities do not cause resource damage or create new roads or extend existing roads. The existing road

system and this off-road travel allowance are designed to accommodate the needs of recreational activities on the public lands. This applies only to all "Limited" designations.

Special circumstances involving specific areas (wilderness study areas) that might require deviation from this standard 300 foot parking area will be signed accordingly.

The authorized officer may approve off-road driving in excess of 300 feet to achieve resource management objectives. For example, a fuel wood harvest area established by a field office may require off-road driving in excess of 300 feet to meet harvest objectives.

Existing Roads and Trails: Are defined as routes existing prior to the date the OHV designation is announced in the Federal Register. These routes may have been constructed and maintained or may be two-track routes created and maintained by the passage of motor vehicles and which receive regular use. Roads and trails may be added, modified, or deleted by the BLM from the inventory through authorizations as needs arise.

Designated Routes: A network of roads and trails specifically identified as the official travel and transportation network for a given area. Designated roads and trails are identified on maps, identified by signs in the field, and may be assigned road numbers for inventory and identification purposes. This may include routes on the official BLM transportation plan that are routinely maintained as well as routes that were user-created and which receive no regular maintenance.

Trails: The term "trails," when used in the phrase "roads and trails" in association with OHV designations means motor vehicle trails only. These include distinct two-track vehicle trails or single-track motorcycle trails which were created by the passage of motor vehicles and which receive continuous use. Cow paths, foot trails, mountain bike trails, and game trails are not motor vehicle trails and motor vehicle travel is not allowed on them. Vehicle traces created by the unauthorized passage of a few motor vehicles are not legal motor vehicle trails.

Mechanical Transport: Any non-motorized vehicle, device or contrivance for moving people or material over land, water, snow, or air that has moving parts. This includes, but is not limited to, sailboats, sailboards, hang gliders, parachutes, bicycles, game carriers, hand carts, wheel barrows, and wagons. The term does not include wheel chairs, nor does it include horses or other pack stock, skis, snow shoes, non-motorized river craft including but not limited to drift boats, rafts, and canoes, or sleds, travois, or similar devices without moving parts. The terms "mechanical transport" and "motor vehicle" are not synonymous.

Off-Road Travel: The term Off-Road Travel, as used here, means travel off of existing roads and trails, or driving cross-country.

Closed Areas: Areas under the "Closed" designation are closed to all motor vehicle use. Motor vehicle access is only allowed for emergencies or by special authorization from the authorized officer.

Recreation Opportunity Spectrum (ROS): The Recreation Opportunity Spectrum provides a framework for stratifying and defining classes of outdoor recreation opportunity environments. Possible mixes of activities, settings, and experience opportunities have been arranged along a spectrum; thus: Recreation Opportunity Spectrum. Each of several classes, ranging from primitive to urban is defined in terms of its combination of activity, setting, and experience opportunities. ROS classes become an integral part of management prescriptions for recreation in the RMP.

Recovering Big Game Animals: This involves driving a motor vehicle away from roads or trails open to motor vehicles for the purpose of recovering a harvested big game animal such as an elk or deer. This

activity is allowable in "Open" areas any distance and in "Limited" areas up to 300 feet from the road or trail as long as roads are not created or extended and as long as resource damage does not occur. This is not allowed in "Closed" areas.

Categories of Roads and Trails that Exist on the Public Lands: A through C of this list conform to BLM guidelines included in the Pocket Field Guide: Road Standards, Excerpts from BLM Manual Section 9113. The kinds of roads that exist on the public lands are as follows:

a. Collector Road – These roads normally provide primary access to large blocks of public land, and connect with or are extensions of a public road system. Collector roads accommodate mixed traffic and serve many uses. They are generally capable of handling high traffic volumes. Collector roads usually require application of the highest engineering standards used by the BLM. Collector roads receive routine maintenance.

b. Local Roads – These BLM roads normally serve a smaller area than collectors, and connect to collectors or the public road system. Local roads receive lower volumes of traffic, carry fewer traffic types, and generally serve fewer users. Low volume local roads in mountainous terrain, where speeds are reduced, may be single lane roads with turnouts, and may be maintained to a lower standard than collector roads.

c. Resource Roads – These are normally spur roads that provide point access and may connect to local or collector roads. They carry low traffic volumes and accommodate few uses.

The following kinds of travel routes are in use but are not currently described in BLM Manual Section 9113.

a. ATV Trail – A narrow two-track created by or for 4-wheel ATV use. Suitable also for motorcycles, bicycles, and non-motorized means of travel.

b. Motorcycle Trail or Single-track Trail – Often created by the passage of motorcycles. Suitable also for bicycles and non-motorized means of travel.

c. Single-Track Bicycle Trail – Established for use by bicycles. May also be suitable for non-motorized means of travel such as foot or equestrian. A trail designed for bicycles is often unsuitable for motorcycle use.

d. Single-Track Foot or Horseback Trail – Trails established for non-motorized or non-mechanized use only.

CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX S

Guidelines for Yearling Conversion

Appendix S
Guidelines for Yearling Conversion

Casper Field Office Policy Statement on Yearling Conversion

The use of conversion factors may be authorized when resource conditions and range management considerations warrant their use.

Yearling use and conversion within the Casper Field Office will function within the following framework.

1. Yearling cattle may be run in same period of use and in the same numbers as customarily licensed for cow/calf pairs without special approval.

2. Livestock management facilities (fences and water must be adequate as determined through the development of an environmental assessment and/or allotment management plan) for the proposed season of use and livestock numbers.

3. Conversions of less than 1:1 may be denied if proposed yearling use would result in a greater than customary percentage of the use being licensed during the growing season.

4. Conversion factors of less than 1:1 will be based on a pre agreed to factor of .75 or the mid-weight of the yearlings for the period of time they are controlled by the applicant. This mid-weight will be determined as shown on Attachment 1. If the management situation and conditions warrant the average daily gain in the second and subsequent years may be calculated using the previous year's weight tickets. The calculation of the conversion factors will be the responsibility of the authorized officer and is not subject to negotiation by the lessee. It is the responsibility of the grazing operator to supply all weight tickets necessary to calculate the conversion factor or the conversion will be denied.

5. All yearling applications must be supported by current proof of control of the livestock to be grazed such as bill of sale, cattle lease, or management agreement. This must be in conformance with 43 CFR 4130.7.

6. The allotment must be operated under an Allotment Management Plan (AMP), Coordinated Resource Management Plan (CRMP), Management Agreement or similar document. A monitoring plan will be in place to determine if adjustments to either the AMP or the conversion factor are required.

7. An environmental assessment (EA) will be done for all allotments where yearling conversions are requested. The EA will address any land use plan decisions for the allotment, the conversion from a cow/calf operation to a yearling operation, the impact to the vegetation, wildlife, watershed, or other resource values as a result of a change in foraging habits and numbers of animals.

8. Other Policy Considerations:

   a. The term of the yearling conversion must be for more than a 3 year period.

   b. If a grazing lease or permit is transferred the yearling conversion will be allowed to remain in place under the same conditions.

   c. No yearling conversions will be allowed for replacement heifers if run in common with cow-calf pairs.

   d. No sheep yearling conversions will be allowed.

   e. The full fee shall be charged for each animal unit month of authorized grazing use in accordance with 43 CFR 4130.8-1(c).

9. Required Terms and Conditions of Permit/Lease:

   a. The AMP, CRMP, Management Agreement or similar document guiding management of the grazing allotment will be made part of the lease/permit.

   b. Any future monitoring which indicates that yearling use is resulting in resource damage or over use of the vegetation will require that the yearling conversion be reviewed by the authorized officer.

   c. The yearling conversion may be terminated at any time at the discretion of the BLM after consultation with the grazing lessee.

Determination of Yearling Conversion Factor

1. The beginning weight for yearling cattle must be determined prior to turning the animals into the allotment. This must be supported by certified weight tickets. The date for the weight tickets may be for any date, two (2) weeks prior to turning yearlings into the allotment.

2. The mid-weight will be determined by using the following formula:

$$\frac{\text{In weight} + (\text{Days} \times 2 \text{ pounds})}{2} = \text{Mid-weight}$$

   * Days refers to the total number of days yearling cattle are in the allotment

   * 2 pounds is the assumed daily weight gain. This figure is administrative and is nonnegotiable, unless average daily gain can be calculated from actual certified weight tickets supplied by the lessee showing the turn in and take out weights of the yearling cattle.

   * Mid-weight will be rounded up to the nearest 50-pound increment.

3. The conversion factors are shown Table S-1.

Table S-1. Conversion Factors

Mid-Weight	Factor
500	.60
600	.70
700	.75
800	.85
900	1.00
550	.65
650	.72
750	.80
850	.90

The conversion factors were established based on data and formula from Kearl (1978).

Reference

Kearl, W. Gordon. 1978. Mountain Valley Ranching in Wyoming. Department of Agriculture Economics University Wyoming AE 78-13 p. 24.

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APPENDIX T

Stock Driveway Management Standards

Appendix T
Stock Driveway Management Standards
(Plan Change 34)

Stock driveways will be utilized to the fullest extent possible. Management Standards[1] for livestock trailing and other uses are as follows:

Trail Use

The following are standards for managing stock driveways (SDWs) and authorizing livestock trailing in the SDWs or on other public lands of the Casper panning area.

Crossing/trail use will be authorized to livestock owners that have a need to trail livestock across public lands. Trail use is trailing livestock across public lands not included in a lessee's grazing lease.

An application must be filed by the person requesting crossing/trail use on public lands prior to making trail use. The application can be in person, in writing or by telephone. The call must be documented and date stamped.

The crossing/trailing permit is authorized when the grazing bill is paid. The bill will be for the animal unit months (AUMs) used and the use will be charged at the annual AUM grazing fee rate.

A service charge will be charged for the crossing/trail bill, unless the crossing/trail permit is applied for prior to the issuance of the annual grazing bill and can be included in the annual bill.

A temporary use authorization for crossing/trailing livestock must contain necessary terms and conditions for the temporary grazing use that will occur. The authorization specifies the following.

- The minimum distance livestock must travel per day; 5 miles/day for sheep, 10 miles/day for cattle.
- The number of days allowed for the crossing/trailing.
- The point of entry.
- The route to be followed.
- The holdover areas.
- The point of exit.
- Any additional terms and conditions needed; and if needed, a statement that the authorization pertains only to lands administered by the Bureau of Land Management (BLM).
- If the trail use is different than the dates applied for, the leasee must notify the BLM of the change in dates prior to making the trail use.

BLM will notify affected permittees and lessees of any trailing plans prior to the move, if the trailing is outside of the designated SDWs.

After-Trail Management Standards

These standards will set the management for authorizing after-trail use on the SDWs within the Casper planning area. The SDWs are commonly known as the 33 Mile SDWs and the Bates Hole SDWs.

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[1] Under Alternative D, SDWs would be revoked and either leased to adjoining grazing lessees or retained for other uses (i.e. forage reserves) to accommodate other objectives. Only the "Other Trail Use Authorization Standards" (page T-2) would be carried forward under Alternative D.

- By definition after-trail use is grazing use that is authorized on the SDWs after the fall trail use has been completed and to utilize forage that may be available after the trail season.
- The after-trail use will be authorized only on an annual basis. Applications for the after-trail use will only be accepted on an annual basis.
- The authorized use will start after October 1 or after the last trail permit has ended.
- Alternative A—The authorized use will end on whichever comes first: vegetation green-up or March 31.
  Alternative B—After trail use would not be authorized and if additional forage is available it would be reserved for other management objectives.
  Alternative C—After trail use would not be authorized, and all forage would be reserved for trail use.
  Alternative D—SDWs are revoked; however, fenced corridors would remain and be available for other uses (i.e forage reserves). Plan Change 34, Other Trail Use Authorization Standards would be carried forward.
  Alternative E—Other uses of SDWs would be allowed outside of normal trailing dates.
  The authorization will not be issued until October 1 or when the trail season is over and the authorized officer of the BLM has determined if adequate forage is available for after-trail use. The decision determination of adequate forage will be documented and filed in the appropriate SDWs file.
- The after-trail use will be authorized for no more than two weeks at a time. BLM will determine prior to the end of the two week period if an extension of use can be authorized. The determination decision will be documented and filed in the appropriate SDWs file.
- The lessees that adjoin the portion of the trail available for after-trail use will have priority for making applications for after-trail use. Lessees that do not have adjoining allotments will only be authorized to make use when no other applications have been made and BLM has determined that adequate forage is available to be used.
- The lessee will be billed for the grazing use at the annual fee rate that is in effect for that period.
- After-trail use will be secondary to the primary use of livestock trailing. If someone needs to trail livestock, the after-trail user will cooperate with the BLM and the person making the trail use, in allowing the trailing livestock passage without interference from their livestock.
- The BLM authorized officer may designate the kind of livestock that can be authorized for making the after-trail use.

Other Trail Use Authorizations Standards

Other management considerations for use on the trail, such as emergency use for relief from fire, management of crested wheatgrass, use on the trail to meet other management objectives in adjoining allotments that require rest from grazing as the result of some management action, drought or other natural cause, etc. These other uses will need to be addressed on a case by case basis in a plan along with an environmental assessment. The proposed use plan will go through the consultation and coordination with all that use the affected area of the trail. The use will be authorized in accordance with the grazing regulations.

The plan will contain at a minimum:

- Proposal and need.
- Objectives and methods.
- Terms and conditions for the use.
- Monitoring plan to insure that the objectives are being met.

When there is an established SDWs and it is not being used for trailing, action will be taken to cancel the SDWs withdrawal and to fence it into adjacent allotments or to issue leases to adjacent BLM lessees. When SDWs are used only slightly for trailing and are not fenced, the BLM will take action to lease the driveway to the grazing lessee whose lease adjoins the area. AUMs will be reserved for trailing.

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APPENDIX U

Intensive Management

Appendix U
Intensive Management

All surface-disturbing activities and wildlife-disturbing activities would be managed intensively in the Bates Hole Special Management Area (SMA), Cedar Ridge Traditional Cultural Property (TCP), Sand Hills SMA, and the South Bighorns and the Red Wall/Gray Wall complex. Intensive management would cover the following resources:

Soil

- All surface disturbances will be minimized. Proposed surface-disturbing activities will be modified (located) to avoid areas of highly erosive soils to the greatest extent practicable.
- Conduct field investigations on every surface-disturbing activity. Onsite soil investigations may include mapping the soils to a series level, collecting soil samples for physical and chemical analysis, evaluating current erosion conditions specific to the site, and prescribing mitigation and reclamation practices.
- Require full topsoil salvage and segregation on all disturbed areas.
- Require a temporary protective surface treatment on all disturbed areas not required for operations on highly erosive soil types within 30 days of disturbance. Surface treatments will vary depending on local site conditions and changes in erosion control technology, but may include mulch, matting, netting or tackifiers.
- Prohibit surface-disturbing activities that cannot reduce soil erosion to less than 2 tons per acre per year by the 5th year after final reclamation.
- Complete reclamation activities (final contouring, replacing topsoil, reseeding, and surface treatment) on all disturbed areas within two growing seasons, or implement temporary measures until the next growing season.
- Reseed all disturbed areas with native species adapted to the site conditions and capable of providing protective soil cover. All seed must be certified weed-free. Nonnative species may be used, on a case-by-case basis, when resource objectives cannot be met through the use of native species and the nonnative plants have no invasive properties.
- Reclamation targets have been established to protect soil resources. Reclamation success will be evaluated after three and five growing seasons. Reclaimed areas that do not have at least 50 percent of predisturbance vegetative cover three growing seasons after final reclamation, and at least 80 percent of predisturbance vegetative cover five growing seasons after final reclamation must be re-treated. Re-treating will vary by site and initial reclamation success, but may include invasive species control, reseeding the site with other native species, or the same native species under more favorable environmental conditions. Re-treatment also may involve additions of fertilizers or soil amendments and protective cover, such as mulch, matting or netting. Livestock grazing also may be limited until reclamation success has been established. Grazing controls will vary by site, but might include herding, fencing, deferred use, or supplemental feeding.
- Evaluate existing road and trail use in the planning area. Close and reclaim all roads and trails on BLM-administered surfaces that are in areas designated as highly erosive soils and not being utilized to meet public demand.
- Conduct annual inspections of disturbed and reclaimed areas on projects in areas of highly erosive soil, or projects disturbing more than 10 acres per year, to determine erosion condition and reclamation success.

Water Resources

- Reclaim and revegetate all unnecessary roads. Unnecessary roads include those that are no longer needed to support a management activity or authorized use. Build and maintain all new BLM roads and all roads associated with BLM-authorized activities to BLM road standards.
- Recognize and apply nonpoint source BMPs (http://www.epa.gov/owow/nps/categories.html) for all activities with potential for increasing nonpoint source pollution. Including, but not limited to, forestry, agriculture (including grazing, cropland management, pesticide use, and fertilization), fire management (prescribed fire and fire suppression), hydromodification and habitat alteration, roads, wetland/riparian management, and weed control.
- Rehabilitate and or stabilize reservoirs that are silted full, abandoned, failing, and (or) otherwise no longer meeting management objectives on all BLM-administered surfaces.
- Drill new water supply wells, develop new seeps and springs, and construct new reservoirs to BLM and state standards to disperse livestock and wildlife use on all BLM-administered lands.

Vegetation

- Manage vegetative communities to allow optimal live vegetative basal cover and ground litter within the potential of the ecological site (soil type, landform, climate, and geology).
- Apply vegetative treatments where and when needed to achieve desired future conditions that may include, but are not limited to, improving age-class diversity, plant vigor, forage quality, and maintaining variable seral states.
- Do not allow placement of salt, mineral, or forage supplements for livestock within ½ mile of water, wetlands, and riparian areas unless written analysis shows that watershed, riparian, wetland, wildlife, and vegetative values would not be adversely impacted. Require that forage supplements be "certified weed-free."

Aspen

- For ecological sites that have the potential to grow aspen, aspen will be considered the desired plant species regarding future management actions.

Mountain Shrub Communities (specifically curl-leaf and true mountain mahogany communities)

- Allow for no net loss of these vegetative communities. Apply vegetative treatments where and when needed to achieve desired future conditions, which may include, but not be limited to improving age-class diversity, plant vigor, and forage quality.

Sagebrush Communities

- Retain an appropriate mix of seral states for the various sagebrush communities to meet the habitat requirements of the numerous wildlife species that depend on these communities.

Riparian

- Bring all riparian areas up to proper functioning condition (PFC) and potential natural community (PNC).
- When crossing perennial streams, riparian and wetland habitats, or water bodies with linear facilities, use best available technology and (or) Best Management Practices (BMPs) to minimize impacts. Wildlife and livestock watering facilities and recreation facilities will be allowed when no other alternatives exist, and only when they meet management objectives. These activities also will be required to use best available technology and (or) BMPs to minimize adverse impacts.

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APPENDIX V

Economic Impact Analysis Methodology

Appendix V
Economic Impact Analysis Methodology

This appendix describes the detailed data used in the economic impact modeling analysis. Input-output models such as the Impact Analysis for Planning (IMPLAN) model, an economic impact analysis model, provide a quantitative representation of the production relationships between individual economic sectors. Thus, the economic modeling analysis uses information about physical production quantities and the prices and costs for goods and services. The inputs required to run the IMPLAN model are described in the following narrative and tables. The resulting estimates from the IMPLAN model, by alternative, can be found in the Economic Conditions section in Chapter 4. The first section, below, provides details of how the IMPLAN model was used to estimate economic impacts. The remaining sections provide additional detailed data used in the analysis for oil and gas, coal, livestock grazing, and recreation.

1.0 THE IMPLAN MODEL

IMPLAN is a regional economic model that provides a mathematical accounting of the flow of money, goods, and services through a region's economy. The model provides estimates of how a specific economic activity translates into jobs and income for the region. It includes the ripple effect (also called the "multiplier effect") of changes in economic sectors that may not be directly impacted by management actions, but are linked to industries that are directly impacted. In IMPLAN, these ripple effects are termed indirect impacts (for changes in industries that sell inputs to the industries that are directly impacted) and induced impacts (for changes in household spending as household income increases or decreases due to the changes in production).

This analysis involved direct changes in economic activity for 11 of the 528 IMPLAN economic sectors (as well as changes in all other related sectors due to the ripple effect). Three of these 11 sectors are related to oil, gas, and coal production (e.g., Natural Gas and Crude Petroleum, Maintenance and Repair of Oil and Gas Wells, and Coal Mining). Two sectors are related to livestock production (Ranch Cattle, and Sheep, Lambs, and Goats). Six sectors are related to off-highway vehicle (OHV) and recreation: Hotels and Lodging Places, Eating and Drinking, Amusement and Recreation Services, Food Stores, Service Stations, and Miscellaneous Retail.

The IMPLAN production coefficients were modified to reflect the interaction of producing sectors in the study area. As a result, the calibrated model does a better job of generating multipliers and the subsequent impacts that reflect the interaction between and among the sectors in the study area compared to a model using unadjusted national coefficients. Specifically, worker productivity in oil and gas production is higher in Wyoming than nationally, and more of the hay used for livestock feed is produced within the region, compared with national averages. Key variables used in the IMPLAN model were filled in using data specific to Wyoming, including employment estimates, labor earnings, and total industry output (Taylor 2004). Due to price fluctuations, the value of cattle and sheep production were based on the average value from 1993 to 2002, calculated based on data from the Wyoming Agricultural Statistics Service (Taylor 2004). This analysis used IMPLAN 2000; prior to running the model, cost and price data were converted to a consistent dollar year (2000) using regional and sector-specific adjustment factors from the model. Though the values in this appendix generally are expressed in year 2000 dollars, model outputs were converted to 2003 dollars for comparison with the 2003 income estimates in Chapter 3.

2.0 OIL AND GAS

The economic impacts analysis for oil and gas reflects drilling, completion, and production activities.

The Minerals – Leasable section in Chapter 4 provides information on the number of oil and gas wells drilled, number of wells completed (i.e., productive wells), and oil and gas production on Bureau of Land Management (BLM)-administered land and mineral estate from 2001 to 2020 in the planning area. The costs of drilling and completing wells and producing oil and gas, also are relevant for the economic impact analysis.

Table V-1 provides a summary of the assumptions used for the economic analysis relative to the costs of drilling, completion, and production of conventional wells in the Wind River Basin, the Powder River Basin, and Salt Creek, as well as for coalbed natural gas wells.

Table V-1. Assumptions for Analysis of Economic Impacts for Oil and Gas Well Drilling and Completion According to Well Type

Assumption	Conventional Wells			Coalbed Natural Gas Wells
	Wind River Basin	Powder River Basin	Salt Creek	
Drilling Impacts				
Drilling Cost ($/well)	$542,123	$621,183	$103,672	$42,400
Local Drilling Costs[1]	99%	100%	89%	82%
Local Direct Impact ($/well)	$536,702	$621,183	$92,268	$34,768
Local Total Impact ($/well)[2]	$789,067	$913,273	$135,564	$51,117
Multiplier (total impact/direct impact)	1.47	1.47	1.47	1.47
Completion Impacts				
Completion Cost ($/well)	$1,106,922	$624,924	$53,947	$57,711
Local Completion Costs[1]	76%	37%	38%	86%
Local Direct Impact ($/well)	$772,861	$231,222	$20,500	$49,631
Local Total Impact ($/well)[2]	$1,117,881	$334,444	$29,651	$71,788
Multiplier (total impact/direct impact)	1.45	1.45	1.45	1.45
Completion Rate (% of completed wells drilled)	77%	80%	99%	98%

Source: Data on drilling and completion costs, completion rate, and local drilling and completion costs were taken from Stilwell (2004) and converted from 2003 to 2000 dollars using IMPLAN adjustment factors.

[1] The local cost shares were based on the percent of total drilling or completion costs that would be spent on goods and services purchased from the local economy.

[2] Total impacts estimated using IMPLAN include direct, indirect, and induced impacts.

The assumptions in Table V-2 were used to determine the values of natural gas and oil production. In addition, the analysis used a figure of $0.89 (year 2000 dollars) per thousand cubic feet (mcf) for gas production costs based on data from the Energy Information Administration (Taylor 2004).

Table V-2. Assumptions for Analysis of Economic Impacts on Output for Oil and Gas Production

Economic Impact	Oil Production (per million barrels)	Gas Production (per billion cubic feet)
Direct Economic Impact[1]	$29,070,000[2]	$4,120,000[3]
Indirect Economic Impact[4]	$ 4,197,650	$594,920
Induced Economic Impact[5]	$688,930	$97,640
Total Economic Impact	$33,956,580	$4,812,560
Multiplier (total impact/direct impact)	1.17	1.17

Note: All dollar values are in 2000 dollars.
[1] Direct economic impact is the market value of output.
[2] Based on oil price forecast of $30 per barrel for beyond 2005 (CREG 2005), converted to 2000 dollars using IMPLAN adjustment factors.
[3] Based on natural gas price forecast of $4.25 per thousand cubic feet for beyond 2005 (CREG 2005) converted to 2000 dollars using IMPLAN adjustment factors.
[4] Indirect impacts from IMPLAN reflect increased demand in sectors that directly or indirectly provide supplies to the oil and gas industry.
[5] Induced impacts from IMPLAN reflect increased demand in the consumer and government sectors.

The forecasted number of wells and production used for estimating employment impacts is the same as for estimating impacts on labor earnings and output. Table V-3 shows the direct and total employment impacts attributable to drilling and completion. Table V-4 shows the direct and total employment impacts associated with production.

Table V-3. Assumptions for Employment Impact Analysis for Oil and Gas Well Drilling and Completion According to Well Type

Employment Impact	Conventional Wells			Coalbed Natural Gas Wells
	Wind River Basin	Powder River Basin	Salt Creek	
Drilling Impacts				
Direct Employment (jobs/well)	4.6	5.3	0.8	0.3
Total Employment Impact (jobs/well)	8.2	9.4	1.4	0.5
Multiplier (Total Impact/Direct Impact)	1.77	1.77	1.77	1.77
Average Earnings per Job (2000 dollars)	$38,358	$38,358	$38,358	$38,358
Average Earnings per Job (2003 dollars)	$39,126	$39,126	$39,126	$39,126
Completion Impacts				
Direct Employment (jobs/well)	8.2	2.5	0.2	0.5
Total Employment Impact (jobs/well)	13.1	3.9	0.3	0.8
Multiplier (Total Impact/Direct Impact)	1.59	1.59	1.59	1.59
Average Earnings per Job (2000 dollars)	$34,402	$34,402	$34,402	$34,402
Average Earnings per Job (2003 dollars)	$35,090	$35,090	$35,090	$35,090

Note: Direct and total employment impact and average earnings per job are calculated using IMPLAN.

Table V-4. Assumptions for Employment Impacts Analysis for Oil and Gas Production

Employment Impact (annual number of jobs)	Oil Production (per million barrels)	Gas Production (per billion cubic feet)
Direct Employment	4.2	0.7
Indirect Employment	21.0	3.5
Induced Employment	8.4	1.4
Total Employment	33.6	5.6
Multiplier (Total Impact/Direct Impact)	8.00	8.00
Average Earnings per Job (2000 dollars)	$38,666	$38,666
Average Earnings per Job (2003 dollars)	$39,440	$39,440

Note: Direct, indirect, and induced employment impact and average earnings per job are calculated using IMPLAN.

The analysis of potential changes in tax revenues is based on tax rates of 12.5 percent of taxable value for federal mineral royalties, 6 percent of taxable value for state severance taxes (WY DOR 2001), and 6.3 percent of taxable value for local ad valorem production taxes (based on averaging local mineral tax rates for Converse County and Natrona County from WY DOR (2005), and reported in the Economic Conditions section of Chapter 3). Taxable value refers to value of sales minus allowable deductions, including certain costs of production and transportation. For analysis purposes, taxable value was estimated based on the average taxable value per unit sold from Natrona and Converse Counties for July 2003 through June 2004 using data from WY DOR (2005). Taxable value was estimated as $27.06 per barrel for oil, and $3.74 per mcf for natural gas (2003 dollars).

3.0 COAL

Although the alternatives being considered would affect coal exploration and leasing, the focus of the quantitative economic analysis in terms of coal mining is on the production from the Antelope Mine, which is located partially in Converse County and partially in Campbell County (outside the planning area). The production of coal from this mine and the proportion from Converse County are not expected to vary by alternative; however, the economic impacts associated with coal production were analyzed in the IMPLAN model because of the relative economic importance of coal in the planning area.

For coal production, the Casper Solid Minerals Group at BLM provided expenditure data on the cost of coal production that ranged from a low of $4.67 per ton in 2004 to $5.74 per ton in 2020 (BLM 2005). These data were based on estimated future overburden and other factors (Wright 2004). Economic impacts were based on price data from the Consensus Revenue Estimating Group (CREG 2004). Consistent with the Powder River Basin Coal Environmental Impact Statement (EIS), the coal price was adjusted over time using a 1 percent annual increase in real price, which is also the trend present in the price data from CREG (2004). The BLM used coal production estimates consistent with the Powder River Basin Coal EIS that range from 29.7 million tons in 2004 to 32 million tons in 2020 based on the likely output of the Antelope Mine, which is located partially in Converse County (Karbs 2004, BLM 2005). The share of the production from Converse County, which is expected to vary over the life of the Resource Management Plan (RMP), was used to derive the share of local income. The estimated share of production from Converse County is 85 percent in 2004 and 2005, 10 percent in 2010, 60 percent in 2015, and 100 percent in 2020 (BLM 2005); the percentage from Converse County is expected to vary over time because the locations of primary production shift back and forth across county lines as coal production continues.

The estimates of employment impact associated with coal production use the same assumptions for production and cost of production as the analysis of impacts on output and labor earnings (i.e., the assumptions in the paragraph immediately above: production estimates ranging from 29.7 million tons in 2004 to 32 million tons in 2020 for the Antelope Mine, adjusted for the share of production from Converse County, and a cost of production ranging from $4.67 per ton in 2004 to $5.74 per ton in 2020). For every $1 million in additional economic output due to coal production, IMPLAN projects between 5.3 and 5.5 additional jobs (1.9 to 2.2 from direct activity and 3.3 to 3.4 from indirect and induced economic activity; the variation is due to multiple runs of IMPLAN that represent different scenarios with respect to price, cost, and labor productivity). Average earnings per job range from $66,149 to $72,473 (2003 dollars); again, the variation is attributable to different IMPLAN runs with different assumptions regarding price, cost, and labor productivity.

4.0 LIVESTOCK GRAZING

Economic impacts due to changes in livestock grazing are a function of the amount of forage available and the economic value of the forage. For livestock grazing, long-term surface-disturbing actions from actions listed in Appendix M could affect the authorized animal unit months (AUMs). In addition, land disposal actions could have economic impacts; however, those impacts were not analyzed quantitatively because it is difficult to predict the net change in AUMs. Subsequent landowners may continue to graze the land, leaving overall livestock production and output in the region unaffected.

Table V-5 provides a summary, according to alternatives, of initial AUMs and total AUMs lost by 2020 due to surface-disturbing activities. Based on current animal inventory levels from the Wyoming Agricultural Statistics Yearbook (Wyoming Agricultural Statistics Service 2003) and factoring in forage requirements that vary by species (BLM 2004), 95 percent of the AUM reduction is allocated to cattle and 5 percent to sheep (for the purpose of estimating changes in output and employment).[1] The base number of AUMs available was 182,789 (Fifield 2004). Surface-disturbance acres were converted to AUMs using a conversion factor of 7.5 acres per AUM (Fifield 2004).

Table V-5. Estimated Animal Unit Month Losses

Item	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Initial AUMs	182,789	182,789	182,789	182,789	182,789
AUMs lost from surface-disturbing activities (total)	2,812	1,542	2,714	2,944	2,890
AUMs lost from surface-disturbing activities (per year)	141	77	136	147	144
Net AUMs in 2020	179,977	181,247	180,075	179,845	179,899

Note: Acres are converted to AUMs using a conversion factor of 7.5 acres per AUM (Fifield 2004).

Due to price fluctuations, average per-AUM values for cattle and sheep are based on the 1993 to 2002 average value of production estimates from the Wyoming Agricultural Statistics Service (Taylor 2004). The value for cattle is $35.25 per AUM and the value for sheep is $22.89 per AUM (in 2000 dollars). Including indirect and induced impacts, the value of one AUM for cattle is $66.12 and for sheep $38.01 (in 2000 dollars). Table V-6 shows the economic impact assumptions for cattle and sheep. The direct

[1] In some years, actual use of grazing leases may be less than 100 percent of authorized use. If surface disturbance impacts land that is authorized for grazing, but not actually used in a given year, then no economic impacts would result from the loss of that grazing land. However, almost none of the grazing lease holders in the planning area apply for nonuse refunds, which implies that the level of use is close to 100 percent of authorized use in most years (Fifield 2006). For the purposes of analysis, grazing economic impacts are based on actual use being 100 percent of authorized use.

economic impact is the estimated change in livestock output per AUM; IMPLAN generates the indirect and induced impacts.

Table V-6. Assumptions for Analysis of Impacts on Output for Livestock Grazing

Economic Impact	Cattle	Sheep
Direct Economic Impact ($/AUM)[1]	$35.25[2]	$22.89
Indirect Economic Impact ($/AUM)[3]	$22.02	$10.00
Induced Economic Impact ($/AUM)[4]	$8.85	$5.12
Total Economic Impact ($/AUM)	$66.12	$38.01
Multiplier (Total Impact/Direct Impact)	1.88	1.66

Note: All dollar values are in 2000 dollars.

[1] Direct economic impact is the market value of output.

[2] Price is based on data for 1993-2002 from Wyoming Agricultural Statistics Service (Taylor 2004).

[3] Indirect impacts reflect increased demand in sectors that directly or indirectly provide supplies to the livestock industry.

[4] Induced impacts reflect increased demand in the consumer and government sectors.

AUM Animal Unit Months

Table V-7 provides a summary of the employment impacts assumed according to unit changes in livestock AUMs.

Table V-7. Assumptions for Analysis of Employment Impacts for Livestock Grazing

Employment Impact	Cattle	Sheep
Direct Employment (Jobs/1,000 AUMs)	0.311	0.705
Indirect Employment (Jobs/1,000 AUMs)	0.275	0.167
Induced Employment (Jobs/1,000 AUMs)	0.141	0.082
Total Employment (Jobs/1,000 AUMs)	0.727	0.955
Multiplier (Total Impact/Direct Impact)	2.34	1.35
Average Earnings per Job (2000 dollars)	$27,180	$12,524
Average Earnings per Job (2003 dollars)	$28,158	$12,975

Note: Direct, indirect, and induced employment impacts and average earnings per job are calculated using IMPLAN.

5.0 RECREATION

The analysis of economic impacts considers only recreation expenditures of nonresidents of the four-county study area. This is based on the assumption that expenditures of residents would occur in the region regardless of the BLM's actions that impact recreational opportunities; however, changes in nonresident recreation patterns would alter the amount of money entering the local region.

Economic impacts from recreation are a function of recreation visitor days (RVDs) and expenditures per day. Future RVDs were estimated based on current RVDs and estimated growth rates. Current RVDs were estimated using RVDs in 2002 from the Wyoming Game and Fish Department (WGFD) (Burkett 2004) for hunting and fishing, and RVDs in 2002 from BLM (Bennett 2004) for OHV and other nonconsumptive recreation (also called dispersed recreation; this category includes, but is not limited to, heritage tourism, hiking, viewing wildlife, biking and horseback riding). Nonresident RVDs in 2002 were estimated at 26,250 for OHV, 28,872 for hunting, 112,399 for fishing, and 29,200 for other nonconsumptive recreation.

Annual growth rates for nonresident RVDs under Alternative A were estimated using a U.S. Forest Service study that provides forecasts of recreation activity for the Rocky Mountain region (Bowker et al.

1999). Annual growth rates for nonresident RVDs under Alternatives B through E were estimated based on the same study (Bowker et al. 1999), but modified by taking into account the impacts of the alternatives with respect to nonresident recreation patterns (Bennett 2004). Table V-8 provides a summary of estimated annual growth rates by alternative.

Table V-8. Estimated Annual Growth Rates for Nonresident Recreation Visitor Days

Recreation Activity	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
OHV	0.7%	0.1%	0.1%	0.4%	0.1%
Hunting	0.5%	1.3%	0.8%	0.5%	1.3%
Fishing	1.0%	0.8%	0.8%	0.8%	0.8%
Other Nonconsumptive	1.5%	3.8%	3.8%	0.9%	0.9%

Source: Based on Bowker et al. 1999 and Bennett 2004, as discussed in text.

% Percent

OHV Off-highway vehicle

The estimates for average expenditure per visitor day are $94.03 for fishing in 2002 dollars (WGFD 2003); $179.63 for hunting in 2002 dollars (Burkett 2004); $51.55 for wildlife watching in 2001 dollars (USFWS 2003; expenditures excluding equipment costs); and $130.60 for OHV use in 2000 dollars (Colorado OHV Coalition 2001). These expenditures were converted to 2000 dollars to facilitate comparison and because the IMPLAN 2000 model uses year 2000 dollars. Table V-9 shows the direct, indirect, and induced output per RVD for each recreation activity.

Table V-9. Assumptions for Analysis of Impacts on Output for Recreation Activities

Economic Impact	OHV (per RVD)	Hunting (per RVD)	Fishing (per RVD)	Other (per RVD)
Direct Economic Impact[1]	$130.60	$170.78	$89.75	$50.36
Indirect Economic Impact[2]	$24.81	$39.36	$12.10	$6.98
Induced Economic Impact[3]	$19.44	$31.91	$13.48	$6.93
Total Economic Impact	$174.85	$242.05	$115.34	$64.27
Multiplier (total impact/direct impact)	1.34	1.42	1.28	1.28

Note: Detail may not add to total due to rounding. All dollar values are in 2000 dollars.

[1] Direct economic impact is the average expenditure per visitor day.

[2] Indirect impacts from IMPLAN reflect increased demand in sectors that directly or indirectly provide support for the recreation industry.

[3] Induced impacts from IMPLAN reflect increased demand in the consumer and government sectors.

IMPLAN Impact Analysis for Planning

OHV Off-highway vehicle

RVD Recreation visitor day

Table V-10 provides a summary of employment impacts assumed according to unit changes in RVDs.

Table V-10. Assumptions for Employment Impacts Analysis for Recreation Activities

Employment Impact (annual number of jobs)	OHV (per RVD)	Hunting (per RVD)	Fishing (per RVD)	Other (per RVD)
Direct Employment	0.002468	0.006071	0.001748	0.000856
Indirect Employment	0.000392	0.000521	0.000169	0.000113
Induced Employment	0.000313	0.000503	0.000216	0.000113
Total Employment	0.003174	0.007095	0.002134	0.001083
Multiplier (Total Impact/Direct Impact)	1.29	1.17	1.22	1.27
Average Earnings per Job (2000 dollars)	$14,568	$10,596	$15,050	$15,234
Average Earnings per Job (2003 dollars)	$15,660	$11,390	$16,118	$16,286

Note: Average earnings per job are in 2000 dollars.

Direct, indirect, and induced employment impact and average earnings per job are calculated using IMPLAN.

IMPLAN Impact Analysis for Planning
OHV Off-highway vehicle
RVD Recreation visitor day

6.0 REFERENCES

Bennett, E. 2004. Personal communication between E. Bennett, Recreation Specialist, BLM Casper Field Office, and Tanja Butler-Melone, Science Applications International Corporation (SAIC) in July 2004.

BLM (Bureau of Land Management). 2004. Fees, Code of Federal Regulations: 43 CFR 4130.8. 2004 Code of Federal Regulations.

BLM. 2005. Casper RMP, Antelope Mine, Converse County, Wyoming. Information compiled by the Casper Solid Minerals Group, Casper Field Office, BLM. September 14, 2005.

Bowker, J.M., D.B.K. English, and H.K. Cordell. 1999. "Projections of Outdoor Recreation Participation to 2050." In: Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends. H.K. Cordell, ed. Champaign, IL: Sagamore Publishing.

Burkett, C. 2004. Strategic Management Coordinator, Wyoming Game and Fish Department. Personal communication between C. Burkett and S. Ragland, SAIC. July 14, 2004.

Colorado OHV Coalition. 2001. Economic Contribution of Off-Highway Vehicle Use in Colorado. Prepared by Hazen and Sawyer. Denver, CO.

CREG (Consensus Revenue Estimating Group). 2004. Wyoming State Government Revenue Forecast for Fiscal Year 2005 – Fiscal Year 2010. http://eadiv.state.wy.us/CREG/GreenCREG.pdf.

Fifield, C. 2004. Personal communication between C. Fifield, Grazing Specialist, BLM Casper Field Office, and Rich McEldowney, SAIC July 2004.

Karbs, M. 2004. Personal communication between Mike Karbs, Assistant Field Manager (Coal), BLM Casper Field Office, and S. Ragland, SAIC July 2004.

Stilwell, D. 2004. BLM Reservoir Management Group. Personal communication between D. Stilwell and L. Ziemke, SAIC, July 9, 2004.

Taylor, D. 2004. Personal communication between D.T. Taylor, Professor, Department of Agricultural Economics, University of Wyoming, and T. Robert Fetter, SAIC, July and August 2004.

USFWS (U.S. Fish and Wildlife Service). 2003. 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: Wyoming. Washington, D.C.: U.S. Department of Commerce.

WGFD (Wyoming Game and Fish Department). 2003. Determining the value of wildlife associated recreation per U.S. Bureau of Land Management Field Office Region in Wyoming. Cheyenne, Wyoming.

Wright, S. 2004. Mining/Evaluation Engineer, Casper Solid Minerals Group, Casper Field Office, BLM. Personal communication between S. Wright and R. Fetter, SAIC. July 8, 2004.

Wyoming Agricultural Statistics Service. 2003. Wyoming Agricultural Statistics 2002. http://www.nass.usda.gov/wy.

WY DOR (Wyoming Department of Revenue). 2001. Severance Tax Rates. http://revenue.state.wy.us/.

WY DOR. 2005. Department of Revenue 2004 Annual Report. http://revenue.state.wy.us/PortalVBVS/uploads/2004AnnualReport.pdf.

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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX W

Parcel Numbers and Legal Descriptions by Resource Program

Appendix W
Parcel Numbers and Legal Descriptions by Resource Program

The following tables provide more detailed information on parcels identified in Table 2-3 of Volume 1.

Table W-1. 6000 Land Resources – Rights-of-Way and Corridors

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Corridors				
Existing Corridors				
These designated corridors would continue to be the preferred locations for adjacent placement of future rights-of-way (ROW).	Same as Alternative A, except the **Oregon Trail Road Corridor, Segment A** designation would be removed and a new corridor, the Cabin Creek Corridor, would be designated.	Same as Alternative A, except the **Oregon Trail Road Corridor, Segment A** would be maintained to allow for additional ROW facilities provided they are subsurface, surface, or low-profile developments. ROW facilities introducing visual intrusions on the skyline along the corridor would not be allowed. The width/size of designated corridors will not change under this alternative.	All corridor designations would be removed. All future ROW development would be evaluated on a case-by-case basis. Under this alternative, no federal acreage would be included in a designated corridor.	Same as Alternative C, except (1) special restrictions applying to types of use/facilities on the corridors would be removed on a case-by-case basis and (2) a new corridor, the Cabin Creek Corridor, would be designated.
The **Oregon Trail Road Corridor Segment A** is approximately 27.3-miles long and 1-mile wide. This corridor crosses a total of approximately 17,978 acres, of which 5,454 acres are federal surface. The **Oregon Trail Road Corridor, Segment A** is approximately 1 mile north of the Oregon Trail Road Corridor between the west boundary of the resource area and Oil Mountain. This segment will be used by all types and sizes of facilities. To the extent possible, the southern ½ mile of the corridor width will be used for powerlines and overhead facilities, and the northern ½ mile will be used for pipelines and other buried facilities.	–	The **Oregon Trail Road Corridor Segment A** is approximately 27.3-miles long and 1-mile wide. This corridor crosses a total of approximately 17,978 acres, of which 5,454 acres are federal surface. The **Oregon Trail Road Corridor, Segment A** is approximately 1 mile north of the Oregon Trail Road Corridor between the west boundary of the resource area and Oil Mountain. This segment will be used by subsurface, surface, or low-profile developments. ROW facilities introducing visual intrusions on the skyline along the corridor will not be allowed. The width/size of designated corridors will not change under this alternative.	–	The **Oregon Trail Road Corridor Segment A** is approximately 27.3-miles long and 1-mile wide. This corridor crosses approximately 17,978 acres, of which 5,454 acres are federal surface. The **Oregon Trail Road Corridor, Segment A** is approximately 1 mile north of the Oregon Trail Road between the west boundary of the resource area and Oil Mountain. This segment will now be used by subsurface, surface, or low-profile developments. ROW facilities introducing visual intrusions on the skyline along the corridor will not be allowed. The width/size of designated corridors will not change under this alternative.
The **Oregon Trail Road Corridor, Segment B,** is approximately 6.8-miles long, and 1-mile wide. This corridor crosses approximately 4,888 acres, of which 880 acres are federal surface. Segment B extends between Oil Mountain and Casper, generally parallel to the Oregon Trail and over Emigrant Ridge. All sizes of overhead facilities will be considered in this segment.	The **Oregon Trail Road Corridor, Segment B,** is approximately 6.8-miles long and 1-mile wide. This corridor crosses approximately 4,888 acres, of which 880 acres are federal surface. Segment B extends between Oil Mountain and Casper, generally parallel to the Oregon Trail and over Emigrant Ridge. All sizes of overhead facilities will be considered in this segment.	The **Oregon Trail Road Corridor, Segment B,** is approximately 6.8-miles long and 1-mile wide. This corridor crosses approximately 4,888 acres, of which 880 acres are federal surface. Segment B extends between Oil Mountain and Casper, generally parallel to the Oregon Trail and over Emigrant Ridge. All sizes of overhead facilities will be considered in this segment.	–	The **Oregon Trail Road Corridor, Segment B,** is approximately 6.8-miles long and 1-mile wide. This corridor crosses a total of approximately 4,888 acres, of which 880 acres are federal surface. Segment B extends between Oil Mountain and Casper, generally parallel to the Oregon Trail and over Emigrant Ridge. All sizes of overhead facilities will be considered in this segment.

Table W-1. 6000 Land Resources – Rights-of-Way and Corridors (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Corridors				
Existing Corridors (Continued)				
The **Oregon Trail Road Corridor, Segment C**, is approximately 11.8-miles long and 1-mile wide. This corridor crosses approximately 8,070 acres, of which 346 acres are federal surface. Segment C branches from the Oil Mountain area, around the north edge of Oil Mountain, then along Poison Spider Road into Casper. This segment will be used for all types and sizes of ROW, but primarily for buried facilities.	The **Oregon Trail Road Corridor, Segment C**, is approximately 11.8-miles long and 1-mile wide. This corridor crosses approximately 8,070 acres, of which 346 acres are federal surface. Segment C branches from the Oil Mountain area, around the north edge of Oil Mountain, then along Poison Spider Road into Casper. This segment will be used for all types and sizes of ROW, but primarily for buried facilities.	The **Oregon Trail Road Corridor, Segment C**, is approximately 11.8-miles long and 1-mile wide. This corridor crosses approximately 8,070 acres, of which 346 acres are federal surface. Segment C branches from the Oil Mountain area, around the north edge of Oil Mountain, then along Poison Spider Road into Casper. This segment will be used for all types and sizes of ROW, but primarily for buried facilities.	–	The **Oregon Trail Road Corridor, Segment C**, is approximately 11.8-miles long and 1-mile wide. This corridor crosses approximately 8,070 acres, of which 346 acres are federal surface. Segment C branches from the Oil Mountain area, around the north edge of Oil Mountain, then along Poison Spider Road into Casper. This segment will be used for all types and sizes of ROW, but primarily for buried facilities.
The **Oregon Trail Road Corridor, Segments B and C** overlap the entire length of Segment B, affecting 1,329 acres, of which 72 acres are federal surface.	The **Oregon Trail Road Corridor, Segments B and C** overlap the entire length of Segment B, affecting 1,329 acres, of which 72 acres are federal surface.	The **Oregon Trail Road Corridor, Segments B and C** overlap for the entire length of Segment B, affecting 1,329 acres, of which 72 acres are federal surface.	–	The **Oregon Trail Road Corridor, Segments B and C** overlap the entire length of Segment B, affecting 1,329 acres, of which 72 acres are federal surface.
The **Poison Spider Road Corridor** is approximately 46-miles long and ½-mile wide. This corridor crosses approximately 30,189 acres, of which 11,044 acres are federal surface. This corridor will be ½-mile wide, ¼ mile on each side of the road.	The **Poison Spider Road Corridor** is approximately 46-miles long and ½-mile wide. This corridor crosses approximately 30,189 acres, of which 11,044 acres are federal surface. This corridor will be ½-mile wide, ¼ mile on each side of the road.	The **Poison Spider Road Corridor** is approximately 46-miles long and ½-mile wide. This corridor crosses approximately 30,189 acres, of which 11,044 acres are federal surface. Tbis corridor will be ½ mile wide, ¼ mile on each side of the road.	–	The **Poison Spider Road Corridor** is approximately 46-miles long and ½-mile wide. This corridor crosses approximately 30,189 acres, of which 11,044 acres are federal surface. This corridor will be ½ mile wide, ¼ mile on each side of the road.
The **Highway 20-26 Corridor** is approximately 68-miles long and 3-miles wide. This corridor crosses approximately 135,620 acres, of which 20,080 acres are federal surface. This corridor will be 3-miles wide, 1½ miles on each side of the highway.	The **Highway 20-26 Corridor** is approximately 68-miles long and 3-miles wide. This corridor crosses approximately 135,620 acres, of which 20,080 acres are federal surface. This corridor will be 3-miles wide, 1½ miles on each side of the highway.	The **Highway 20-26 Corridor** is approximately 68 miles long, and is 3 miles wide. This corridor crosses a total of approximately 135,620 acres, of which 20,080 acres are federal surface. This corridor will be 3-miles wide, 1½ miles on each side of the highway.	–	The **Highway 20-26 Corridor** is approximately 68-miles long and 3-miles wide. This corridor crosses approximately 135,620 acres, of which 20,080 acres are federal surface. This corridor will be 3-miles wide, 1½ miles on each side of the highway.
The **Wyoming Highway 259/U.S. 87 Corridor** is approximately 40.5-miles long and from 1- to 5-miles wide. This corridor crosses approximately 126,772 acres, of which 35,056 acres are federal surface. This corridor will be 2-miles wide between Casper and Ormsby Road, 5-miles wide between Ormsby Road and Midwest, and 1-mile wide between Midwest and the northern boundaries of the resource area.	The **Wyoming Highway 259/U.S. 87** Corridor is approximately 40.5-miles long and from 1- to 5-miles wide. This corridor crosses approximately 126,772 acres, of which 35,056 acres are federal surface. This corridor will be 2-miles wide between Casper and Ormsby Road, 5-miles wide between Ormsby Road and Midwest, and 1-mile wide between Midwest and the northern boundaries of the resource area.	The **Wyoming Highway 259/U.S. 87** Corridor is approximately 40.5-miles long and from 1- to 5-miles wide. This corridor crosses approximately 126,772 acres, of which 35,056 acres are federal surface. This corridor will be 2-miles wide between Casper and Ormsby Road, 5-miles wide between Ormsby Road and Midwest, and 1-mile wide between Midwest and the northern boundaries of the resource area.	–	The **Wyoming Highway 259/U.S. 87 Corridor** is approximately 40.5-miles long and from 1- to 5-miles wide. This corridor crosses a total of approximately 126,772 acres, of which 35,056 acres are federal surface. This corridor will be 2-miles wide between Casper and Ormsby Road, 5-miles wide between Ormsby Road and Midwest, and 1-mile wide between Midwest and the northern boundaries of the resource area.
The **Wyoming Highway 387 Corridor** is approximately 5-miles long and 2-miles wide. This corridor crosses approximately 9,462 acres, of which 3,660 acres are federal surface. This corridor will be 2-miles wide, 1-mile on each side of the highway.	The **Wyoming Highway 387 Corridor** is approximately 5-miles lon, and is 2-miles wide. This corridor crosses approximately 9,462 acres, of which 3,660 acres are federal surface. This corridor will be 2-miles wide, 1-mile on each side of the highway.	The **Wyoming Highway 387 Corridor** is approximately 5-miles long and 2-miles wide. This corridor crosses approximately 9,462 acres, of which 3,660 acres are federal surface. This corridor will be 2-miles wide, 1-mile on each side of the highway.	–	The **Wyoming Highway 387 Corridor** is approximately 5-miles lon, and 2-miles wide. This corridor crosses a total of approximately 9,462 acres, of which 3,660 acres are federal surface. This corridor will be 2-miles wide, 1-mile on each side of the highway.

Table W-1. 6000 Land Resources – Rights-of-Way and Corridors (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Corridors				
Existing Corridors (Continued)				
The **Lost Cabin-Arminto Road Corridor** is approximately 24-miles long, and is estimated to be 2 miles wide. This corridor crosses a total of approximately 33,659 acres, of which 17,633 acres are federal surface.	The **Lost Cabin-Arminto Road Corridor** is approximately 24-miles long, and is estimated to be 2-miles wide. This corridor crosses approximately 33,659 acres, of which 17,633 acres are federal surface.	The **Lost Cabin-Arminto Road Corridor** is approximately 24-miles long, and is estimated to be 2-miles wide. This corridor crosses approximately 33,659 acres, of which 17,633 acres are federal surface.	–	The **Lost Cabin-Arminto Road Corridor** is approximately 24-miles long and estimated to be 2-miles wide. This corridor crosses approximately 33,659 acres, of which 17,633 acres are federal surface.
New Corridors				
–	The **Cabin Creek Corridor** is located along the route of the Howell Petroleum Carbon Dioxide Pipeline project (constructed in 2003), from the southwestern Casper Field Office boundary to the northern Casper Field Office boundary. This corridor will be 1 mile wide, being ½ mile on either side of the carbon dioxide (CO_2) pipeline. This new corridor is approximately 64 miles long, and encompasses 40,404 acres, of which 23,722 acres are federal surface. Within this new corridor, a strip 75 feet wide was disturbed for the CO_2 pipeline construction. That area, approximately 575 acres, of which 333 acres are federal surface in Natrona County, is being actively stabilized and reclaimed.	–	–	The **Cabin Creek Corridor** is located along the route of the Howell Petroleum Carbon Dioxide Pipeline project (constructed in 2003), from the southwestern Casper Field Office boundary to the northern Casper Field Office boundary. This corridor will be 1-mile wide, being ½ mile on either side of the CO_2 pipeline. This new corridor is approximately 64-miles long, and encompasses 40,404 acres, of which 23,722 acres are federal surface. Within this new corridor, a strip 75 feet wide was disturbed for the CO_2 pipeline construction. That area, approximately 575 acres, of which 333 acres are federal surface in Natrona County, is being actively stabilized and reclaimed.
Rights-of-Way Use Areas				
Existing				
The **Alcova Area Communication Site** would continue.	In addition to continuing the existing **Alcova Area Communication Site** window (which contains three sites), five new communication site windows (ROW use areas) will be designated in accordance with 43 CFR 2806.	The Communication Site window (ROW use area) designation as the preferred locations for adjacent placement of future communication site ROW.	Remove all communication site window (Right of Way Use Area) designations will be removed and will be evaluated all future communication site ROWs on a case-by-case basis. Under this alternative, no federal acreage would be included in a designated Right of Way Use Area (communication site window).	Same as Alternative C, except in addition to continuing the existing **Alcova Area Communication Site** window (which contains three sites), five new communication site windows (ROW use areas) will be designated in accordance with 43 CFR 2806.
Alcova Area Communication Site (three sites in T. 29 N., R. 83 W., Sections 5, 18; T. 30 N., R. 83 W., Sections 30, 31, Natrona County).	**Alcova Area Communication Site** (three sites in T. 29 N., R. 83 W., Sections 5, 18; T. 30 N., R. 83 W., Sections 30, 31, Natrona County).	**Alcova Area Communication Site** (three sites in T. 29 N., R. 83 W., Sections 5, 18; T. 30 N., R. 83 W., Sections 30, 31, Natrona County).	–	**Alcova Area Communication Site** (three sites in T. 29 N., R. 83 W., Sections 5, 18; T. 30 N., R. 83 W., Sections 30, 31, Natrona County).

Table W-1. 6000 Land Resources – Rights-of-Way and Corridors (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Rights-of-Way Use Areas				
New				
–	**Twenty-Mile Hill Communication Site** (T. 36 N., R. 79 W., Section 3, Natrona County).	–	–	**Twenty-Mile Hill Communication Site** (T. 36 N., R. 79 W., Section 3, Natrona County).
–	**Arminto Communication Site** (T. 38 N., R. 87 W., Section 33, Natrona County).	–	–	**Arminto Communication Site** (T. 38 N., R. 87 W., Section 33, Natrona County).
–	**Maverick Butte Communication Site** (T. 34 N., R. 89 W., Section 2, Natrona County).	–	–	**Maverick Butte Communication Site** (T. 34 N., R. 89 W., Section 2, Natrona County).
–	**Hell's Half Acre Communication Site** (T. 36 N., R. 86 W., Section 24, Natrona County).	–	–	**Hell's Half Acre Communication Site** (T. 36 N., R. 86 W., Section 24, Natrona County).
–	**Dry Creek Road Communication Site** (T. 35 N., R. 87 W., Section 18, Natrona County).	–	–	**Dry Creek Road Communication Site** (T. 35 N., R. 87 W., Section 18, Natrona County).
Avoidance and Exclusion Areas				
The existing restrictions on placement of ROW will continue: Exclusion areas for ROW's contain 352,822 acres of public land. ROW avoidance areas comprise 577,147 acres of public land. These areas are shown on Map 36.	The existing restrictions on placement of ROW will not be carried forward. The ROW avoidance and exclusion areas to be implemented under this alternative are the areas identified as necessary for the protection of specific resource values or uses (e.g., see Biological Resources and Special Designations). Exclusion areas for ROW contain 1,095,500 acres of public land. ROW avoidance areas comprise 190,593 acres of public land. These areas are shown on Map 37.	The existing restrictions on placement of ROW will not be carried forward. The ROW avoidance and exclusion areas to be implemented under this alternative are the areas identified as necessary for the protection of specific resource values or uses (e.g., see Biological Resources and Special Designations). Exclusion areas for ROW contain 755,332 acres of public land. ROW avoidance areas comprise 348,930 acres of public land. These areas are shown on Map 38.	The existing restrictions on placement of ROW will not be carried forward. The ROW avoidance and exclusion areas to be implemented under this alternative are the areas identified as necessary for the protection of specific resource values or uses (e.g., see Biological Resources and Special Designations). Exclusion areas for ROW contain 504,803 acres of public land. ROW avoidance areas comprise 465,391 acres of public land. These areas are shown on Map 39	The existing restrictions on placement of ROW will not be carried forward. The ROW avoidance and exclusion areas to be implemented under this alternative are the areas identified as necessary for the protection of specific resource values or uses (e.g., see Biological Resources and Special Designations). Exclusion areas for ROW contain 536,610 acres of public land. ROW avoidance areas comprise 410,434 acres of public land. These areas are shown on Map 40.
ROW on **Pine Ridge** (Resource Management Plan Overlay Area no. 18) will be prohibited, affecting approximately 9,846 acres.	–	–	–	–
Placement of ROW will be restricted on **Highway 220 from Bessemer Mountain to Alcova** (see Plan Change no. 1). A width for the restriction ofROW along Highway 220, from Bessemer Mountain to Alcova, was not specified. If a 1-mile width is assumed, this prohibition encompasses approximately 23,643 acres, of which 4,413 acres are federal surface.	–	–	–	–

Table W-1. 6000 Land Resources – Rights-of-Way and Corridors (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Avoidance and Exclusion Areas (Continued)				
Placement of ROW will be restricted on the newly constructed segments of **I-25 in Townships 37, 38, 39, and 40 North, Ranges 79 and 80 West**. A width for the restriction of ROW was not specified. Along this interstate highway, a width of 2 miles is assumed (a 1-mile buffer on each side of the highway); this prohibition would encompass approximately 25,330 acres, of which 6,323 acres are federal surface.	–	–	–	–
Placement of ROW will be restricted on **Rattlesnake Range**, affecting approximately 49,198 acres, of which 26,450 acres are federal surface.	–	–	–	–
Placement of ROW will be restricted on **Muddy Mountain elk winter range** inclusive of the Muddy Mountain Environmental Education Area (EEA). This restriction encompasses approximately 20,748 acres, of which 1,260 acres are federal surface.	–	–	–	–
Placement of ROW will be restricted within 1 mile of the **North Platte River.**	–	–	–	–
Placement of ROW will be restricted on **Jackson Canyon Areas of Critical Environmental Concern (ACEC)**, affecting approximately 14,025 acres, of which 3,939 acres are federal surface.	–	–	–	–
Placement of ROW will be restricted on **Squaw Mountain**, affecting approximately 3,861 acres, of which 2,403 acres are federal surface.	–	–	–	–
The area lying **north and west of the Badwater, Lost Cabin-Arminto, and Buffalo Creek roads and the Red Wall** is closed to placement of ROW, affecting approximately 173,824 acres. An exception will be made if oil and gas leases in this area achieve production. At that time, ROW will be allowed only in accordance with an approved oil field development plan. While the area is not closed to ROW needed to transport oil-field development products, the right-of-way must parallel county roads other than the Big Horn Mountain Road, Okie Trail, and Buffalo Creek county roads. This decision restricts ROW to the designated Lost Cabin-Arminto Road Corridor.	–	–	–	–

Table W-2. 6000 Land Resources – Transportation

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
The Casper Field Office will pursue acquisition of 16 easements or cooperative agreements for access over about 36 miles of private lands, as listed below: Coral Creek, 3½ miles, T31N, R79W, Sec. 9, SE¼SE¼; Sec. 10, SW¼NW¼, W½SW¼; Sec. 14, SW¼SW¼; Sec. 15, S½SW¼, SE¼, Sec. 16, E½E½; Sec. 23, NW¼NW¼.	Corral Creek, 3½ miles, T31N, R79W, Sec. 9, SE¼SE¼; Sec. 10, SW¼NW¼, W½SW¼; Sec. 14, SW¼SW¼; Sec. 15, S½SW¼, SE¼, Sec. 16, E½E½; Sec. 23, NW¼NW¼.	Corral Creek, 3½ miles, T31N, R79W, Sec. 9, SE¼SE¼; Sec. 10, SW¼NW¼, W½SW¼; Sec. 14, SW¼SW¼; Sec. 15, S½SW¼, SE¼, Sec. 16, E½E½; Sec. 23, NW¼NW¼.	None, acquisition of easements would be on a case-by-case basis.	None, acquisition of easements would be on a case-by-case basis.
Bates Creek Reservoir (Resource Management Plan Overlay Area no. 8), 3 miles, T29N, R78W, Sec. 7, S½SW¼; Sec. 8, S½SW¼; Sec. 16, N½N½; Sec. 17, N½NE¼, NE¼NW¼; T29N, R79W, Sec. 12, SE¼SE¼; Sec. 13, N½NE¼, E¼NW¼, N½SW¼, SW¼SW¼.	Bates Creek Reservoir (Resource Management Plan Overlay Area no. 8), 3 miles, T29N, R78W, Sec. 7, S½SW¼; Sec. 8, S½SW¼; Sec. 16, N½N½; Sec. 17, N½NE¼, NE¼NW¼; T29N, R79W, Sec. 12, SE¼SE¼; Sec. 13, N½NE¼, SE¼NW¼, N½SW¼, SW¼SW¼.	Bates Creek Reservoir (Resource Management Plan Overlay Area no. 8), 3 miles, T29N, R78W, Sec. 7, S½SW¼; Sec. 8, S½SW¼; Sec. 16, N½N½; Sec. 17, N½NE¼, NE¼NW¼; T29N, R79W, Sec. 12, SE¼SE¼; Sec. 13, N½NE¼, SE¼NW¼, N½SW¼, SW¼SW¼.	–	–
Kerfoot Creek (foot access only), ½ mile, T29N, R79W, Sec. 2, NE¼NW¼; T30N, R79W, Sec. 26, SE¼NW¼; Sec. 35, SE¼SW¼.	Kerfoot Creek (foot access only), ½ mile, T29N, R79W, Sec. 2, NE¼NW¼; T30N, R79W, Sec. 26, SE¼NW¼; Sec. 35, SE¼SW¼.	Kerfoot Creek (foot access only), ½ mile, T29N, R79W, Sec. 2, NE¼NW¼; T30N, R79W, Sec. 26, SE¼NW¼; Sec. 35, SE¼SW¼.	–	–
Alkali Trail, ¾ mile, T39N, R84W, Sec. 23, SE¼NE¼; T38N, R85W, Sec. 16, NW¼NE¼, NE¼NW¼.	Alkali Trail, ¾ mile, T39N, R84W, Sec. 23, SE¼NE¼; T38N, R85W, Sec. 16, NW¼NE¼, NE¼NW¼.	Alkali Trail, ¾ mile, T39N, R84W, Sec. 23, SE¼NE¼; T38N, R85W, Sec. 16, NW¼NE¼, NE¼NW¼.	–	–
Horse Ranch, 2½ miles, T37N, R80W, Sec. 10, SW¼SE¼; Sec. 15, S½NW¼; Sec. 16, SE¼NE¼, N½SE¼, SW¼SE¼; T37N, R81W, Sec. 16, E½NW¼, SW¼NW¼; T38N, R79W, Sec. 27, SW¼SW¼; Sec. 33, N½NE¼; Sec.34, NW¼NW¼.	Horse Ranch, 2½ miles, T37N, R80W, Sec. 10, SW¼SE¼; Sec. 15, S½NW¼; Sec. 16, SE¼NE¼, N½SE¼, SW¼SE¼; T37N, R81W, Sec. 16, E½NW¼, SW¼NW¼; T38N, R79W, Sec. 27, SW¼SW¼; Sec. 33, N½NE¼; Sec.34, NW¼NW¼.	Horse Ranch, 2½ miles, T37N, R80W, Sec. 10, SW¼SE¼; Sec. 15, S½NW¼; Sec. 16, SE¼NE¼, N½SE¼, SW¼SE¼; T37N, R81W, Sec. 16, E½NW¼, SW¼NW¼; T38N, R79W, Sec. 27, SW¼SW¼; Sec. 33, N½NE¼; Sec.34, NW¼NW¼.	–	–
Hitt, 61/2 miles, T37N, R82W, Sec. 2, NE¼SE¼; T38N, R82W, Sec. 10, S½SW¼; Sec. 15, N½NW¼; Sec. 16, N½NE¼, SW¼NE¼, E½SW¼, SW¼SW¼, NW¼SE¼; Sec.20, SE¼NE¼, N½SE¼, SE¼SW¼; Sec. 29, NW¼, E½SW¼; T37N, R83W, Sec. 5, SE¼NW¼; Sec. 8, SW¼NE¼, E½SE¼; Sec. 17, E½E½; Sec. 20, NE¼, W½SE¼.	Hitt, 61/2 miles, T37N, R82W, Sec. 2, NE¼SE¼; T38N, R82W, Sec. 10, S½SW¼; Sec. 15, N½NW¼; Sec. 16, N½NE¼, SW¼NE¼, E½SW¼, SW¼SW¼, NW¼SE¼; Sec.20, SE¼NE¼, N½SE¼, SE¼SW¼; Sec. 29, NW¼, E½SW¼; T37N, R83W, Sec. 5, SE¼NW¼; Sec. 8, SW¼NE¼, E½SE¼; Sec. 17, E½E½; Sec. 20, NE¼, W½SE¼.	Hitt, 61/2 miles, T37N, R82W, Sec. 2, NE¼SE¼; T38N, R82W, Sec. 10, S½SW¼; Sec. 15, N½NW¼; Sec. 16, N½NE¼, SW¼NE¼, E½SW¼, SW¼SW¼, NW¼SE¼; Sec.20, SE¼NE¼, N½SE¼, SE¼SW¼; Sec. 29, NW¼, E½SW¼; T37N, R83W, Sec. 5, SE¼NW¼; Sec. 8, SW¼NE¼, E½SE¼; Sec. 17, E½E½; Sec. 20, NE¼, W½SE¼.	–	–
Big Sulphur, 5¾ miles, T39N, R82W, Sec. 30, S½NW¼, NW¼SW¼; T38N, R83W, Sec. 3, E½SW¼, SW¼SW¼, N½SE¼, Sec. 4, N½SW¼, SE¼SW¼, S½SE¼; Sec. 5, E½SE¼; T39N, R83W, Sec. 25, SE¼SW¼, N½SE¼, SW¼SE¼; Sec. 36, N½NW¼; T39N, R84W, Sec. 1, SW¼SW¼; Sec. 2, N½SW¼, W½SE¼, SE¼SE¼; Sec. 12, NW¼NW¼, SE¼NW¼, NE¼SW¼.	Big Sulphur, 5¾ miles, T39N, R82W, Sec. 30, S½NW¼, NW¼SW¼; T38N, R83W, Sec. 3, E½SW¼, SW¼SW¼, N½SE¼, Sec. 4, N½SW¼, SE¼SW¼, S½SE¼; Sec. 5, E½SE¼; T39N, R83W, Sec. 25, SE¼SW¼, N½SE¼, SW¼SE¼; Sec. 36, N½NW¼; T39N, R84W, Sec. 1, SW¼SW¼; Sec. 2, N½SW¼, W½SE¼, SE¼SE¼; Sec. 12, NW¼NW¼, SE¼NW¼, NE¼SW¼.	Big Sulphur, 5¾ miles, T39N, R82W, Sec. 30, S½NW¼, NW¼SW¼; T38N, R83W, Sec. 3, E½SW¼, SW¼SW¼, N½SE¼, Sec. 4, N½SW¼, SE¼SW¼, S½SE¼; Sec. 5, E½SE¼; T39N, R83W, Sec. 25, SE¼SW¼, N½SE¼, SW¼SE¼; Sec. 36, N½NW¼; T39N, R84W, Sec. 1, SW¼SW¼; Sec. 2, N½SW¼, W½SE¼, SE¼SE¼; Sec. 12, NW¼NW¼, SE¼NW¼, NE¼SW¼.	–	–

Table W-2. 6000 Land Resources – Transportation (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Canyon Creek, 2¼ miles, T33N, R88W, Sec. 19, E½W¼; T33N, R89W, Sec. 26, SW¼NE¼, W½SE¼, SE¼SE¼; Sec. 36, N½N½.	Canyon Creek, 2¼ miles, T33N, R88W, Sec. 19, E½W¼; T33N, R89W, Sec. 26, SW¼NE¼, W½SE¼, SE¼SE¼; Sec. 36, N½N½.	Canyon Creek, 2¼ miles, T33N, R88W, Sec. 19, E½W¼; T33N, R89W, Sec. 26, SW¼NE¼, W½SE¼, SE¼SE¼; Sec. 36, N½N½.	–	–
North Platte River, Parcel No. 2, 1¼ miles, T34N, R74W, Sec. 33, SE¼SW¼, E½SE¼, SW¼SE¼; Sec. 34, N½S½.	North Platte River, Parcel No. 2, 1¼ miles, T34N, R74W, Sec. 33, SE¼SW¼, E½SE¼, SW¼SE¼; Sec. 34, N½S½.	–	–	–
North Platte River, Parcel No. 3, ¼ mile, T33N, R74W, Sec. 3, E½SE¼.	North Platte River, Parcel No. 3, ¼ mile, T33N, R74W, Sec. 3, E½SE¼.	–	–	–
North Platte River, Parcel No. 4, 1½ miles, T31N, R71W, Sec. 3, W½W½; Sec. 4, SE¼SE¼; Sec. 9, NE¼NE¼; T32N, R71W, Sec. 34, SW¼SW¼.	North Platte River, Parcel No. 4, 1½ miles, T31N, R71W, Sec. 3, W½W½; Sec. 4, SE¼SE¼; Sec. 9, NE¼NE¼; T32N, R71W, Sec. 34, SW¼SW¼.	–	–	–
North Platte River, Parcel No. 5, 3¼ miles, T31N, R70W, Sec. 18, SE¼NE¼, E½SE¼; Sec. 19, E½NE¼, SW¼NE¼, W½NW¼, SE¼NW¼; T31N, R71W, Sec. 23, W½NE¼, SE¼NE¼, NE¼SE¼; Sec. 24, N½N½, SW¼NW¼, NW¼SW¼.	North Platte River, Parcel No. 5, 3¼ miles, T31N, R70W, Sec. 18, SE¼NE¼, E½SE¼; Sec. 19, E½NE¼, SW¼NE¼, W½NW¼, SE¼NW¼; T31N, R71W, Sec. 23, W½NE¼, SE¼NE¼, NE¼SE¼; Sec. 24, N½N½, SW¼NW¼, NW¼SW¼.	–	–	–
North Platte River, Parcel No. 6, ½ mile, T30N, R68W, Sec. 7, N½NW¼ (Parcel No. 7 already has access).	North Platte River, Parcel No. 6, ½ mile, T30N, R68W, Sec. 7, N½NW¼.	–	–	–
North Platte River, Parcel No. 8, 1½ miles, T26N, R65W, Sec. 10, SE¼NE¼; Sec. 11, SW¼NW¼; Sec. 14, W½W½. North Platte River.	North Platte River, Parcel No. 8, 1½ miles, T26N, R65W, Sec. 10, SE¼NE¼; Sec. 11, SW¼NW¼; Sec. 14, W½W½.	–	–	–
North Platte River, Parcel No. 9, 2 miles, T26N, R64W, Sec. 7, SE¼SW¼, SW¼SE¼; Sec. 17, N½SW¼, SE¼SW¼; Sec. 18, W½NE¼, NE¼NW¼, N½SE¼, Sec. 20, NW¼NE¼.	North Platte River, Parcel No. 9, 2 miles, T26N, R64W, Sec. 7, SE¼SW¼, SW¼SE¼; Sec. 17, N½SW¼, SE¼SW¼; Sec. 18, W½NE¼, NE¼NW¼, N½SE¼, Sec. 20, NW¼NE¼.	–	–	–
Upper Laramie River, 1¼ miles, T23N, R70W, Sec. 3, S½S½; Sec. 4, S½SE¼; Sec. 10, NE¼NE¼.	Upper Laramie River, 1¼ miles, T23N, R70W, Sec. 3, S½S½; Sec. 4, S½SE¼; Sec. 10, NE¼NE¼.	–	–	–

Table W-3. 7000 Special Designations – Alcova Fossil Area

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
The Alcova Fossil Area will be evaluated for significant paleontological resources; a mineral withdrawal from the 1872 Mining Law will be recommended if necessary. No surface occupancy would be allowed inside the withdrawal area. The 1,200-acre Areas of Critical Environmental Concern (ACEC) designation will be eliminated. The identified lands follow: Original Parcel T. 29 N., R. 82 W., Sec. 6, NW¼NW¼ T. 29 N., R. 83 W., Sec. 1, E½, NW¼, E½SW¼ Sec. 2, NE¼NE¼ T. 30 N., R. 82 W., Sec. 29, SW¼SW¼ Sec. 30, SE¼ Sec. 31, NE¼, SE¼NW¼, E½SW¼.	The Alcova Fossil Area will be designated as an ACEC. Preservation of the paleontological resources will be encouraged by prohibiting all surface-disturbing activities except those in support of scientific research. A mineral withdrawal will be pursued. The area will be closed to off-highway vehicle (OHV) use. No visitor facilities or development will be done in the area. A management plan will be written to identify long-term goals for management and determine allowable activities. The area for designation includes public lands on the north and south sides of Alcova Reservoir, as follows: North Parcel T. 30 N., R. 83 W., Sec. 21, SE¼SE¼ Sec. 22, S½NW¼, SW¼, S½SE¼ Sec. 27, N½ South Parcel T. 29 N., R. 82 W., Sec. 4, W½ Sec. 5, E½ Sec. 6, NW¼NE¼, S½NE¼, W½, SE¼ Sec. 7, W½, W½E½ Sec. 8, E½E½ Sec. 9, W½ Sec. 17, E½NE¼ Sec. 18, W½E½, W½ T. 29 N., R. 83 W., Sec. 1, E½, NW¼, E½SW¼ Sec. 2, NE¼NE¼ Sec. 12, E½ Sec. 13, E½E½ T. 30 N., R. 82 W., Sec. 19, S½NE¼, SE¼ Sec. 20, SW¼ Sec. 29, NW¼, S½ Sec. 30, E½ Sec. 31, NE¼, SE¼NW¼, E½SW¼, W½SE¼ Sec. 32, E½, E½NW¼, NW¼NW¼ Sec. 33, NE¼, W½.	The Alcova Fossil Area will be designated as an ACEC. Preservation of the paleontological resources will be encouraged by minimizing all surface-disturbing activities except those in support of scientific research. A mineral withdrawal will be pursued. The area will be closed to OHV use. Visitor interpretation and education facilities will be minimal, using offsite or nearby signs or kiosks. A management plan will be written for any development and to identify long-term goals for management. The area for designation includes public lands on the south side of Alcova Reservoir only, as follows: South Parcel T. 29 N., R. 82 W., Sec. 4, W½ Sec. 5, E½ Sec. 6, NW¼NE¼, S½NE¼, W½, SE¼ Sec. 7, W½, W½E½ Sec. 8, E½E½ Sec. 9, W½ Sec. 17, E½NE¼ Sec. 18, W½E½, W½ T. 29 N., R. 83 W., Sec. 1, E½, NW¼, E½SW¼ Sec. 2, NE¼NE¼ Sec. 12, E½ Sec. 13, E½E½ T. 30 N., R. 82 W., Sec. 19, S½NE¼, SE¼ Sec. 20, SW¼ Sec. 29, NW¼, S½ Sec. 30, E½ Sec. 31, NE¼, SE¼NW¼, E½SW¼, W½SE¼ Sec. 32, E½, E½NW¼, NW¼NW¼ Sec. 33, NE¼, W½.	The Alcova Fossil Area will be managed under a Special Management Area designation. Other resource activities will be allowed to occur only if they do not cause undue degradation to the paleontological resources present in the area. Areas determined to be sensitive to damage will be identified and closed to OHV use. Scientific research will be encouraged. Visitor interpretation and education facilities (e.g., trails, interpretive signs, and kiosks) will be encouraged. A cooperative management approach will be formulated with the Bureau of Reclamation and other parties, as appropriate. A management plan will be written only if public facilities only will be considered. The area for designation includes public lands on the south side of Alcova Reservoir only, as follows: South Parcel T. 29 N., R. 82 W., Sec. 4, W½ Sec. 5, E½ Sec. 6, NW¼NE¼, S½NE¼, W½, SE¼ Sec. 7, W½, W½E½ Sec. 8, E½E½ Sec. 9, W½ Sec. 17, E½NE¼ Sec. 18, W½E½, W½ T. 29 N., R. 83 W., Sec. 1, E½, NW¼, E½SW¼ Sec. 2, NE¼NE¼ Sec. 12, E½ Sec. 13, E½E½ T. 30 N., R. 82 W., Sec. 19, S½NE¼, SE¼ Sec. 20, SW¼ Sec. 29, NW¼, S½ Sec. 30, E½ Sec. 31, NE¼, SE¼NW¼, E½SW¼, W½SE¼ Sec. 32, E½, E½NW¼, NW¼NW¼ Sec. 33, NE¼, W½.	Same as Alternative C.

Table W-3. 7000 Special Designations – Alcova Fossil Area (Continued)

Alterntive A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
–	All public lands will be retained. The following parcels that are presently private or state land will be explored for acquisition of lands and interests in lands: High Priority (to maintain public access to U.S. Bureau of Reclamation (USBR) recreation area and acquire significant resources) T. 29 N., R. 83 W., Sec. 1, W½SW¼ Sec. 2, SE¼NE¼ Moderate Priority (to acquire important resources and access routes) T. 29 N., R. 82 W., Sec. 6, NE¼NE¼ Sec. 8, W½E½ (State land) T. 30 N., R. 82 W., Sec. 31, E½SE¼ Sec. 32, SW¼ T. 30 N., R. 83 W., Sec. 28, E½NE¼ Low Priority (to enhance opportunities for research, interpretation, and management and (or) reduce inholdings) T. 29 N., R. 82 W., Sec. 5, W½ Sec. 7, E½E½ (state land) Sec. 8, W½ (state land) Sec. 17, W½NE¼, N½SE¼ T. 29 N., R. 83 W., Sec. 2, W½NE¼ Sec. 12, W½NW¼, SE¼SW¼ Sec. 13, W½NE¼, W½SE¼, SE¼SE¼ T. 30 N., R. 82 W., Sec. 32, SE¼NW¼.	All public lands will be retained. The following parcels that are presently private or state land will be explored for acquisition of lands and interests in lands: High Priority (to maintain public access to USBR recreation area and acquire significant resources) T. 29 N., R. 83 W., Sec. 1, W½SW¼ Sec. 2, SE¼NE¼ Moderate Priority (to acquire important resources and access routes) T. 29 N., R. 82 W., Sec. 6, NE¼NE¼ Sec. 8, W½E½ (State land) T. 30 N., R. 82 W., Sec. 31, E½SE¼ Sec. 32, SW¼ Low Priority (to enhance opportunities for research, interpretation, and management and (or) reduce inholdings) T. 29 N., R. 82 W., Sec. 5, W½ Sec. 7, E½E½ (state land) Sec. 8, W½ (state land) Sec. 17, W½NE¼, N½SE¼ T. 29 N., R. 83 W., Sec. 2, W½NE¼ Sec. 12, W½NW¼, SE¼SW¼ Sec. 13, W½NE¼, W½SE¼, SE¼SE¼ T. 30 N., R. 82 W., Sec. 32, SE¼NW¼.	All public lands will be retained. No additional lands will be sought to add to the present public land ownership patten.	–

Table W-4. 7000 Special Designations – National Historic Trails and Other Historic Trails

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
*C2: Oregon Trail The Oregon-Mormon Trail sites marked with an asterisk in the following list will be nominated to the National Register (829 acres). *Fort Laramie A, T26N, R64W, Sec. 35, SW¼NE¼, SE¼NW¼, SW¼SW¼NW¼NW¼, and ¼ mile of either side of the trail through lots 6, 7, 8 and the W½SE¼ *Fort Laramie B, T26N, R64W, Sec. 27, SW¼SW¼SE¼ *Old Bedlam, T26N, R64W, Sec. 17, SW¼SW¼ *"Prospect" (Ryan) Hill (HS-WY-060-25), T31N, R83W, Sec. 8, SE¼SW¼, W½SE¼; Sec. 17, NW¼; Sec. 18, NE¼, N½SE¼ *Platte Island, T34N, R77W, Sec. 31, SW¼NW¼SW¼SW¼ *Sergeant Custard, T33N, R80W, Sec. 15, SW¼NW¼ *Glade Draw, T26N, R65W, Sec. 23, E½E½NE¼ "Horse Creek," T30N, R85W, Sec. 15, E½NW¼ Emigrant Gap, T33N, R81W, Sec. 10, SW¼NE¼ (see Plan Change No. 25, approved March 20, 1997) Bessemer Bend, T32N, R81W, Sec. 3 (about 3 acres)	(The legal descriptions for Alternative B are the same as those identified in Alternative A.)	(The legal descriptions for Alternative C are the same as those identified in Alternative A.)	. (The legal descriptions for Alternative D are the same as those identified in Alternative A.)	(The legal descriptions for Alternative E are the same as those identified in Alternative A.)
Ft. Laramie "A" Segment, T26N, R64W, Sec. 35, lots 6 and 7, SW¼NE¼, NW¼NW¼, SE¼NW¼, NW¼SE¼. Contains approximately 221.56 acres. Old Bedlam Segment, T26N, R64W, Sec. 17, SW¼SW¼. Contains approximately 40 acres. Tract Adjacent to South Boundary, T26N, R64W, Sec. 28, E½SW¼, W½SE¼ (excluding Ft. Laramie National Historic Site withdrawal). Contains approximately 148 acres. Tract South of Old Bedlam, T26N, R64W, Sec. 20, SW¼NE¼, E½NW¼. Contains approximately 120 acres. TOTAL 529.56 acres.	(The legal descriptions for Alternative B are the same as those idenfied in Alternative A).	(The legal descriptions for Alternative C are the same as those idenfied in Alternative A).	Since the Memorandum of Understanding (MOU) is allowed to expire under this alternative, no parcels are identified.	Cooperatively manage per Interagency Agreement No. K910-A3-0013 with the National Park Service for management of trail segments included in the agreement. Continue the existing withdrawal on 800 acres and enlarge the withdrawal by 140 acres to 940 acres. Ft. Laramie "A" Segment, T26N, R64W, Sec. 35, lots 6 and 7, SW¼NE¼, NW¼NW¼, SE¼NW¼, NW¼SE¼. Contains approximately 221.56 acres. Old Bedlam Segment, T26N, R64W, Sec. 17, SW¼SW¼. Contains approximately 40 acres. Tract Adjacent to South Boundary, T26N, R64W, Sec. 28, E½SW¼, W½SE¼ (excluding Ft. Laramie National Historic Site withdrawal). Contains approximately 148 acres. Tract South of Old Bedlam, T26N, R64W, Sec. 20, SW¼NE¼, E½NW¼. Contains approximately 120 acres. TOTAL: 529.56 acres.

Table W-4. 7000 Special Designations – National Historic Trails and Other Historic Trails (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Should the private surface owner so desire, BLM would prohibit surface disturbance on the following Oregon Trail sites: Oregon Trail Monument, T30N, R70W, Sec. 19, NW¼SW¼; Oregon Trail Monument, T31N, R71W, Sec. 29, Center; Knob Hill, T31N, R72W, Sec. 13, NW¼NE¼; La Prele Station, T32N, R72W, Sec. 10, SW¼SW¼; Parker and Ringo graves, T33N, R76W, Sec. 1, SW¼NW¼; Battle of Red Buttes, T32N, R81W, Sec. 32, SW¼NE¼; Poison Spring, T33N, R81W, Sec. 20, NW¼ and SW¼. These sites were identified in the Historic Trails Management Plan issued by the Wyoming Recreation Commission in December 1984.	Pursue agreements prohibiting surface disturbance with private land owners on private trail segments per list in 1985 Resource Management Plan.	Enter into agreements prohibiting surface disturbance on private trail segments when approached by surface owners.	Do not enter into agreements prohibiting surface disturbance on private trail segments.	Enter into agreements to manage surface disturbance on private trail segments when requested by surface owners.
C3: Bozeman Trail Spring Draw **T40N R75 W** Sec. 24, W½SE¼; Sec. 25, NE¼. Spring Draw 2 **T40 N R74W** Sec. 31, W½NW¼. Stinkingwater Draw **T39N R74W** Sec. 34,NE¼, E½E½NW¼, E½SE¼; Sec. 35, SW¼, SW¼NW¼. **T38N R74W** Sec. 2, NE¼NE¼SW¼, N½NW¼SE¼, NW¼NE¼, SW¼NE¼, NE¼NW¼,SE¼NW¼. Holdup Hollow **T36N R74W** Sec. 22, E½E½NE¼.	Spring Draw **T40N, R75W** SE¼ SE¼, Sec. 11 S½ SW¼, Sec. 12 W½, SW¼ SW¼ SE¼, Sec. 13 E½ E½ E½, Sec. 14 NW¼ NW¼ NW¼, E½ W½ NW¼, W½ NE¼, SE¼ NE¼, S½ NE¼ NE¼, Sec. 24 NE¼, Sec. 25 Spring Draw 2 **T40N, R74W** W½ NW¼, Sec. 31 Stinkingwater Draw **T39N, R74W** SW¼ SW¼ SW¼, Sec. 26 S½ SW¼ NW¼, SW¼ SE¼ NW¼, SW¼, S½ S½ SE¼, NW¼ SW¼ SE¼, Sec. 27 S½ NE¼ SW¼ NE¼, E½ SW¼ SW¼ NE¼, SE¼ SW¼ NE¼, S½ SE¼ NE¼, S½ N½ SE¼ NE¼, NW¼ NW¼ SE¼, E½ NW¼ SE, NE¼ SE, NW¼ SW¼ SE¼, SE¼ SE¼, Sec. 28 E½, E½ W½, NW¼ NW¼, N½ SW¼ NW¼, SE¼ SW¼ NW¼, Sec. 34 SW¼, SW¼ NW¼, SW¼ SE¼ NW¼, NW¼ SE¼ NW¼, SE¼ SE¼ NW¼, S½ NW¼ NW¼, SE¼ NW¼ NW¼, Sec. 35 **T38N, R74W** NW¼, N½ SW¼, SW¼ SW¼ NE¼, SE¼ SW¼, W½ SE¼, W½ SE¼ SE¼, Sec. 2 NE¼, NE¼ NW¼, NW¼ SE¼ NW¼, N½ N½ SE¼, Sec. 3 NE¼ NE¼ NW¼, N½ NW¼ NE¼, NW¼ NE¼ NE¼, S½ NW¼ NE¼, Sec. 11 Holdup Hollow **T36N, R74W** SW¼ NW¼, W½ SW¼, W½ SE¼ NE¼, NW¼ NE¼ SW¼, W½ SW¼ NE¼ SW¼, W½ W½ SE¼ SW¼, Sec. 2 E½ E½ SE¼, E½ SE¼ NE¼, W½ SE¼ SE¼,	Spring Draw **T40N, R75W** SE¼ SE¼, Sec. 11 S½ SW¼, Sec. 12 W½, SW¼ SW¼ SE¼, Sec. 13 E½ E½ E½, Sec. 14 NW¼ NW¼ NW¼, E½ W½ NW¼, W½ NE¼, SE¼ NE¼, S½ NE¼ NE¼, Sec. 24 NE¼, Sec. 25 Spring Draw 2 **T40N, R74W** W½ NW¼, Sec. 31 Stinkingwater Draw **T39N, R74W** SW¼ SW¼ SW¼, Sec. 26 S½ SW¼ NW¼, SW¼ SE¼ NW¼, SW¼, S½ S½ SE¼, NW¼ SW¼ SE¼, Sec. 27 S½ NE¼ SW¼ NE¼, E½ SW¼ SW¼ NE¼, SE¼ SW¼ NE¼, S½ SE¼ NE¼, S½ N½ SE¼ NE¼, NW¼ NW¼ SE¼, E½ NW¼ SE, NE¼ SE, NW¼ SW¼ SE¼, SE¼ SE¼, Sec. 28 E½, E½ W½, NW¼ NW¼, N½ SW¼ NW¼, SE¼ SW¼ NW¼, Sec. 34 SW¼, SW¼ NW¼, SW¼ SE¼ NW¼, NW¼ SE¼ NW¼, SE¼ SE¼ NW¼, S½ NW¼ NW¼, SE¼ NW¼ NW¼, Sec. 35 **T38N, R74W** NW¼, N½ SW¼, SW¼ SW¼ NE¼, SE¼ SW¼, W½ SE¼, W½ SE¼ SE¼, Sec. 2 NE¼, NE¼ NW¼, NW¼ SE¼ NW¼, N½ N½ SE¼, Sec. 3 NE¼ NE¼ NW¼, N½ NW¼ NE¼, NW¼ NE¼ NE¼, S½ NW¼ NE¼, Sec. 11 Holdup Hollow **T36N, R74W** SW¼ NW¼, W½ SW¼, W½ SE¼ NE¼, NW¼ NE¼ SW¼, W½ SW¼ NE¼ SW¼, W½ W½ SE¼ SW¼, Sec. 2 E½ E½ SE¼, E½ SE¼ NE¼, W½ SE¼ SE¼,	Same as Alternative D.

Table W-4. 7000 Special Designations – National Historic Trails and Other Historic Trails (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	Sec. 3 E½ E½, E½ NW¼ NE¼, SW¼ NE¼, W½ SE¼, SE¼ SE¼ NE¼, E½ NE¼ SW¼, SW¼ NE¼ SW¼, SW¼ SW¼, Sec. 10 NW¼ NW¼, W½ SW¼ NW¼, NE¼ SW¼ NW¼, W½ SE¼ SW¼ NW¼, W½ NW¼ SW¼, W½ SW¼ SW¼, Sec. 11 E½ W½, E½, Sec. 15 N½ NE¼, SE¼ NE¼, E½ SW¼ NE¼, NW¼ SW¼ NE¼, N½ NE¼ SE¼, NW¼ NW¼ SE¼, Sec. 22 W½ NW¼ NW¼, SW¼ NW¼, N½ NW¼ SW¼, NW¼ NE¼ SW¼, Sec. 23 Ross Flat **T41N, R75W** W½ W½, W½ SE¼ SW¼, Sec. 26 E½ E½, NE¼ NW¼ SE¼, Sec. 27 E½ NE¼, Sec. 34 NW¼, SW¼ SW¼ NE¼, E½ SW¼, NW¼ SW¼, S½ SE¼, NW¼ SE¼, SW¼ NE¼, SW¼, Sec. 35 **T40N, R75W** W½ W½ SW¼, W½ SW¼ NW¼, SW¼ NW¼ NW¼, Sec. 1 NE¼ NW¼ NW¼, NE¼ NW¼, NE¼ SE¼ NW¼, NE¼, E½ SE¼, E½ W½ SE¼, Sec. 2 E½ NE¼, E½ W½ NE¼, N½ NE¼ SE¼, NE¼ NW¼ SE¼, Sec. 11 W½ W½ NW¼, N½ NW¼ SW¼, NE¼ NW¼ SW¼, Sec. 12 Brown Spring **T37N, R74W** Sec. 23 (all) Frank Draw **T36N, R74W** NE SW, Sec. 35 Sage Creek Station **T35N, R73W** N½, N½ S½, Sec. 18 Sand Creek Rural Transportation Corridor NE¼ NE¼ NE¼, Sec. 1 N½ NW¼, NE¼ SW¼ NW¼, SE¼ NW¼, E½ NE¼ SW¼, NW¼ SE¼ SW¼, SE¼ NE¼ SW¼, NW¼ NE¼, W½ NE¼ NE¼, SW¼ NE¼, W½ SE¼ NW¼, W½ E½ SE¼ NE¼, SE¼, Sec. 6 E½ NE¼, E½ NW¼ NE¼, NW¼ NW¼ NE¼, E½ W½ NE¼ SE¼, E½ NE¼ SE¼, NE¼ SE¼ SE¼, Sec. 7 W½ NW¼, W½ E½ NW¼, NW¼ SW¼, N½ SW¼ SW¼, W½ NE¼ SW¼, NW¼ SE¼ SW¼, Sec. 8	Sec. 3 E½ E½, E½ NW¼ NE¼, SW¼ NE¼, W½ SE¼, SE¼ SE¼ NE¼, E½ NE¼ SW¼, SW¼ NE¼ SW¼, SW¼ SW¼, Sec. 10 NW¼ NW¼, W½ SW¼ NW¼, NE¼ SW¼ NW¼, W½ SE¼ SW¼ NW¼, W½ NW¼ SW¼, W½ SW¼ SW¼, Sec. 11 E½ W½, E½, Sec. 15 N½ NE¼, SE¼ NE¼, E½ SW¼ NE¼, NW¼ SW¼ NE¼, N½ NE¼ SE¼, NW¼ NW¼ SE¼, Sec. 22 W½ NW¼ NW¼, SW¼ NW¼, N½ NW¼ SW¼, NW¼ NE¼ SW¼, Sec. 23 Ross Flat **T41N, R75W** W½ W½, W½ SE¼ SW¼, Sec. 26 E½ E½, NE¼ NW¼ SE¼, Sec. 27 E½ NE¼, Sec. 34 NW¼, SW¼ SW¼ NE¼, E½ SW¼, NW¼ SW¼, S½ SE¼, NW¼ SE¼, SW¼ NE¼, SW¼, Sec. 35 **T40N, R75W** W½ W½ SW¼, W½ SW¼ NW¼, SW¼ NW¼ NW¼, Sec. 1 NE¼ NW¼ NW¼, NE¼ NW¼, NE¼ SE¼ NW¼, NE¼, E½ SE¼, E½ W½ SE¼, Sec. 2 E½ NE¼, E½ W½ NE¼, N½ NE¼ SE¼, NE¼ NW¼ SE¼, Sec. 11 W½ W½ NW¼, N½ NW¼ SW¼, NE¼ NW¼ SW¼, Sec. 12 Brown Spring **T37N, R74W** Sec. 23 (all)	Sec. 3 E½ E½, E½ NW¼ NE¼, SW¼ NE¼, W½ SE¼, SE¼ SE¼ NE¼, E½ NE¼ SW¼, SW¼ NE¼ SW¼, SW¼ SW¼, Sec. 10 NW¼ NW¼, W½ SW¼ NW¼, NE¼ SW¼ NW¼, W½ SE¼ SW¼ NW¼, W½ NW¼ SW¼, W½ SW¼ SW¼, Sec. 11 E½ W½, E½, Sec. 15 N½ NE¼, SE¼ NE¼, E½ SW¼ NE¼, NW¼ SW¼ NE¼, N½ NE¼ SE¼, NW¼ NW¼ SE¼, Sec. 22 W½ NW¼ NW¼, SW¼ NW¼, N½ NW¼ SW¼, NW¼ NE¼ SW¼, Sec. 23	

Table W-4. 7000 Special Designations – National Historic Trails and Other Historic Trails (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	Sand Creek Station **T39N, R74W** SW¼ NW¼, Sec. 17 Cheyenne River Divide **T38N, R74W** NW¼ SE¼, W½ SW¼ SE¼, W½ NE¼ SW¼ SE¼, E½ SE¼ SW¼, E½ SE¼ NE¼ SW¼, Sec. 24 W½ NW¼ NE¼, NE¼ NW¼, SE¼ NW¼, NE¼ SW¼, W½ NW¼ SW¼, W½ SE¼ SW¼, E½ SW¼ SW¼, Sec. 25 N½ NW¼ NW¼, NW¼ NE¼ NW¼, Sec. 36 Cheyenne River Station **T37N, R74W** NW¼ NW¼, Sec. 1			

– No management action identified

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CASPER DRAFT
RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX X

Invasive, Nonnative Plant Species Best Preventative Management Practices and Mitigation Options

Appendix X
Invasive, Nonnative Plant Species
Best Preventative Management Practices and Mitigation Options

The purpose of this appendix is to provide the authorized officer with a reasonable range of situational management actions to prevent and (or) mitigate the spread of invasive nonnative plant species (INPS). These management actions include, but are not limited to, the suggested management actions described below.

The authorized officer may require the following:

MA INPS 1 – That an onsite inspection be conducted to identify the presence of any INPS before any surface-disturbing activity is conducted.

MA INPS 2 – That surface disturbance be kept to the minimum so that resource or user objectives can be accomplished.

MA INPS 3 – That bare soil resulting from fire or surface-disturbing activities be seeded to a "weed-free" seed mixture prescribed specifically for the site(s), and

a. That seed from native species appropriate to the site be used

   (or)

b. That the nonnatives have no invasive properties when the use of seed from nonnative plants is warranted.

MA INPS 4 – That topsoil be stockpiled to be reused for reclamation, and

a. That stockpiled topsoil be covered to prevent emergence of INPS and to prevent contamination by INPS seed from adjacent areas

b. That, if INPS are present, follow-up INPS treatments are required once the topsoil has been reapplied and the site seeded.

MA INPS 5 – That, when necessary to stabilize a site being reclaimed, seeded areas be mulched or covered, and

a. That weed-free mulching or cover materials (e.g., hydro-mulch, burlap sheeting, "certified weed-free" straw, etc.) be used

   (or)

b. That if the use of a cover crop is warranted, the crop has no invasive properties and is free of INPS seeds.

MA INPS 6 – That seeding applications and treatments be continued until desired vegetation is well established (approximately 80 percent of predisturbance basal cover).

MA INPS 7 – That reclaimed areas are protected from livestock grazing by the following.

a. Installing temporary fence and precluding livestock grazing until desired vegetation is well established (approximately 80 percent of pre-disturbance basal cover).

   (or)

b. Requiring rest or growing season deferment in pastures containing unfenced reclaimed areas until desired vegetation is well established (approximately 80 percent of pre-disturbance basal cover).

MA INPS 8 – That the retention or introduction of desirable roadside vegetation be used to discourage INPS establishment.

MA INPS 9 – That weed preventative measures be implemented when authorizing the use of supplemental feed for recreational animal and livestock use. In addition,

a. When authorizing the use of forage supplement, require that said supplement is weed-seed free in composition, or "certified weed-free" when authorizing hay or grain-based forages in which viable seeds could be present, and that instructions for placement and use are given.

b. When authorizing the use of salt/mineral supplement, require that said supplement be placed in a nonporous container and that instructions for placement and use are given.

c. Unless otherwise warranted, require the placement of a supplement a minimum of a ½ mile from water and out of drainage bottoms.

MA INPS 10 – That signage be installed to identify INPS area boundaries, prohibited uses, use stipulations and conditions, and to promote public education and awareness.

MA INPS 11 – That light vehicles, heavy equipment, and trucks used for official and permitted tasks, such as fire, construction, drilling, seismic activities, timber harvesting, hauling livestock, mining, etc., be INPS seed-free (clean) before moving onto or within the public lands, and if working in a known INPS area, require that said vehicles be cleaned before leaving the worksite.

MA INPS 12 – That road, two-track trail, and off-road restrictions or closures for casual and permitted motorized vehicle use.

MA INPS 13 – That livestock have been residing in an area known to be INPS-infested, livestock are held in a weed-free area and flushed for 72 hours prior to moving onto or within the public lands. *Note: This MA has been specifically addressed under the action alternatives because of its potential for controversy and is subject to management approval.*

MA INPS 14 – That, at a minimum, preclude Grazing livestock on large areas of chemically treated vegetation for one complete growing season and fire-treated vegetation for two growing seasons; if necessary, continue growing season deferment or total rest until the desired vegetation is approximately 80 percent of pre-application/disturbance basal cover.

MA INPS 15 – That cooperation exists with county weed-control districts in enforcing any quarantine actions and the conditions thereof.

MA INPS 16 –Monitoring and inspections as needed.

CASPER DRAFT
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GLOSSARY

Glossary

Allotment: An area of land where one or more livestock operators graze their livestock. Allotments are Bureau of Land Management (BLM) lands, but may also include other federally managed, state-owned, and private lands. An allotment may include one or more separate pastures. Livestock numbers and periods of use are specified for each allotment. Allotments are classified by the following:

Category I – Improve Existing Resource Conditions

Category M – Maintain Existing Resource Conditions

Category C – Custodial Management.

Analysis Area: Any lands, regardless of jurisdiction, for which the BLM synthesizes, analyzes, and interprets data for information that relates to planning for BLM-administered lands.

Animal Unit Month (AUM): A standardized measurement of the amount of forage necessary for the sustenance of one cow unit or its equivalent for 1 month (approximately 800 pounds of forage).

Big Game Crucial Winter Range: Winter habitat on which a wildlife species depends for survival. Because of severe weather conditions or other limiting factors, no alternative habitat would be available.

Borrow Material: A term used in conjunction with construction. The term refers to unprocessed material excavated from a borrow pit for use as fill at another location.

Carbon Dioxide Flood: A carbon dioxide flood is an enhanced oil recovery technique that injects fluid into the reservoir. When carbon dioxide is injected, it mixes with the oil and the two compounds dissolve into one another. The injected CO_2 acts as a solvent to overcome forces that trap oil in tiny rock pores and helps sweep the immobile oil left behind after the effectiveness of water injection decreases, resulting in increased oil production (EnCana 2005).

Class I Wells: Injection wells that are

(1) Wells used by generators of hazardous waste or owners or operators of hazardous waste management facilities to inject hazardous waste beneath the lowermost formation containing, within ¼ mile of the well bore, an underground source of drinking water.

(2) Other industrial and municipal disposal wells that inject fluid beneath the lowermost formation containing, within ¼ mile of the well bore, an underground source of drinking water.

(3) Radioactive waste disposal wells that inject fluid below the lowermost formation containing an underground source of drinking water within ¼ mile of the well bore.

Class II Wells: Injection wells

(1) That are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production, and may be commingled with wastewaters from gas plants, which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection.

(2) For enhanced recovery of oil or natural gas.

(3) For storage of hydrocarbons that are liquid at standard temperature and pressure.

Closed: Generally denotes that an area is not available for a particular use or uses; refer to specific definitions found in law, regulations, or policy guidance for application to individual programs.

Commodity: An economic good, such as a product of agriculture or mining.

Comprehensive Weed Management Plan: A plan for controlling invasive plant species that incorporates integrated weed management techniques and accounts for pertinent considerations, such as management actions and allocations affecting weeds.

Controlled Surface Use (CSU): Surface occupancy or use will be restricted or prohibited unless the operator and surface managing agency arrive at an acceptable plan for mitigation of anticipated impacts. Identified resource values require special operational constraints that may modify the lease rights. CSU is used for operating guidance, not as a substitute for the no surface occupancy or timing limitation stipulations.

Cultural Resource Inventory Levels: A three-tiered process for discovering, recording, and evaluating cultural resources.

(a) Class I - A review of existing literature and oral informant data combined with an analysis of a specific geographic region (e.g., an area of potential effect, drainage basin, resource area, etc.).

(b) Class II - A sampling survey usually aimed at developing and testing a predictive model of cultural resource distribution.

(c) Class III - An on-the-ground survey to discover, record, and evaluate cultural resources within a specific geographic area (e.g., usually an area of potential effect for a proposed undertaking).

(d) dB (decibel): A unit of measurement of the loudness or strength of a signal. One decibel is considered the smallest difference in sound level that the human ear can discern. Decibels are a relative measurement derived from two signal levels: a reference input level and an observed output level. A decibel is the logarithm of the ratio of the two levels. One Bel is when the output signal is 10x that of the input and one decibel is $1/10^{th}$ of a Bel.

Designated Roads and Trails: Specific roads and trails on which some type of motorized vehicle use is allowed either seasonally or year-long.

Ecological Site: A kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in that the site has the ability to produce distinctive kinds and amounts of vegetation and to respond to management. Ecological sites are defined and described with information about soil, species composition, and annual production.

Ephemeral Stream: A stream that flows only in direct response to precipitation, and whose channel is at all times above the water table. Confusion over the distinction between intermittent and ephemeral streams may be minimized by applying Meinzer's suggestion that the term "ephemeral" be arbitrarily restricted to streams that do not flow continuously for at least 30 days (Prichard et al. 1998). Ephemeral streams support riparian areas when streamside vegetation reflects the presence of permanent subsurface water.

Exceedance: An event in which measurements of ambient air quality are above the national ambient air quality standard (NAAQS) or Wyoming Department of Environmental Quality (DEQ) standard set for a particular pollutant. For example, an annual average nitrogen dioxide value of 110 $\mu g/m^3$ is an exceedance of both the NAAQS and Wyoming DEQ annual average standard for nitrogen dioxide of 100 $\mu g/m^3$.

Exclusion Areas: Areas with sensitive resource values where rights-of-way and 302 permits, leases, and easements would not be authorized.

Extensive Recreation Management Areas (ERMA): These are areas where dispersed recreation is encouraged and where visitors have a freedom of recreational choice with minimal regulatory constraint.

Fire Management Plan: Identifies appropriate strategies to achieve resource objectives. Identifies fire policy, objectives, and prescribed actions; may include maps, charts, tables, and statistical data.

Fire Regime Condition Class: A classification of the amount of departure from the natural fire regime. The departure results in changes to one or more of the following ecological components: vegetation characteristics (e.g., species composition, structural stages, stand age, canopy closure, and mosaic pattern), fuel composition, fire frequency, severity, and pattern, and other associated disturbance (e.g., insect and disease mortality, grazing, and drought). The three condition classes are listed below:

(a) Condition Class 1

- The historic disturbance regime is largely intact and functioning (e.g., has not missed a fire return interval)
- Potential intensity and severity of fire within historic range
- Effects of disease and insects within historic range
- Hydrologic functions within normal historic range
- Vegetation composition and structure resilient to disturbances
- Nonnative species currently not present or to a limited extent
- Low risk of loss for key ecosystem components.

(b) **Condition Class 2**

- Moderate alterations to historic disturbance regime evident (e.g., missed one or more fire return intervals)
- Effects of disease and insects pose an increased risk of loss of key community components
- Riparian areas and associated hydrologic function show measurable signs of adverse departure from historic conditions
- Vegetation composition and structure shifted toward conditions less resilient to disturbances
- Populations of nonnative species may have increased, increasing the risk of further increases following disturbance.

(c) **Condition Class 3**

- Historic disturbance regime significantly altered; historic disturbance processes and impacts may be precluded (e.g., missed several fire return intervals)
- Effects of disturbance (fire, insects, and disease) may cause significant or complete loss of key community components
- Hydrologic functions may be adversely altered; high potential for increased sedimentation and reduced streamflows
- Invasive, nonnative species may be common and in some cases the dominant species on the landscape; disturbance will likely increase both the dominance and geographic extent of these invasive species
- Highly altered vegetation composition and structure predisposes community to disturbance events outside the range of historic availability; disturbance may have effects not observed or measured before.

Fire Return Interval: The number of years between two successive fire events at a specific site or area.

Flaring/Venting: The controlled burning (flare) or release (vent) of natural gas that cannot be processed for sale or use because of technical or economic reasons.

Floodplain Connectivity: Maintenance of lateral, longitudinal, and vertical pathways for biological and hydrological processes in the floodplain. Examples of failures to maintain connectivity could include culverts or levees that restrict flow in the floodplain and that focus overbank flow into the channel.

Flushing Livestock: Flushing livestock is the holding of livestock in an invasive, nonnative plant species (INPS) seed-free area where they are fed an INPS seed-free ration for 72 hours, thus flushing INPS seed from the animals' digestive systems.

Foreground-Middle Ground Zone: An area that can be seen from a travel route for a distance of 3 miles (foreground) to 5 miles (middle ground) where management activities might be viewed. A distance from 5 to 15 miles is called the *Background Zone* and the area beyond 15 miles is called the *Seldom-Seen Zone.*

Geologic Resources: Resources associated with the scientific study of the Earth, including its composition, structure, physical properties, and history. Geologic resources commonly include the study of minerals (**mineralogy**) and rocks (**petrology**); the structure of the Earth (**structural geology**) and volcanic phenomena (**volcanology**); and landforms and the processes that produce them (**geomorphology** and **glaciology**).

Goal: A broad statement of a desired outcome. Goals are usually not quantifiable and may not have established timeframes for achievement.

Guzzler: A water development for wildlife.

HABS/HAER: The Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) is an integral component of the federal government's commitment to historic preservation. The program documents important architectural, engineering and industrial sites throughout the United States and its territories. A complete set of HABS/HAER documentation, consisting of measured drawings, large-format photographs, and written history plays a key role in accomplishing the mission of creating an archive of American architecture and engineering and in better understanding what historic resources tell us about America's diverse ethnic and cultural heritage. To insure that such evidence is not lost to future generations, the HABS/HAER Collections are archived at the Library of Congress, where they are made available to the public.

Heavy Equipment Use: This phrase is used in fire management and is relative to limiting fire suppression tactics. In this context it refers to not using dozers, skidders, or graders in areas where important resource values are in need of protection. Fire engines and water tenders used during suppression activities would be allowed.

Held by Production: Leases that become productive and do not terminate until all wells on the lease have ceased production.

Integrated Weed Management: The use of all appropriate weed control measures, including fire, as well as mechanical, chemical, biological, and cultural techniques, in an organized and coordinated manner on a site-specific basis.

Intermittent Stream: A stream that flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas. Confusion over the distinction between intermittent and ephemeral streams may be minimized by applying Meinzer's suggestion that the term "intermittent" be arbitrarily restricted to streams that flow continuously for periods of at least 30 days (Prichard et al. 1998).

Impact Analysis for Planning (IMPLAN 2000) Model: IMPLAN is a regional economic model that provides a mathematical accounting of the flow of money, goods, and services through a region's economy. The model provides estimates of how a specific economic activity translates into jobs and income for the region. It includes the "ripple effect" (also called the "multiplier effect") of changes in economic sectors that may not be directly impacted by management actions, but are linked to industries that are directly impacted. In IMPLAN, these ripple effects are termed indirect impacts (for changes in industries that sell inputs to the industries that are directly affected) and induced impacts (for changes in household spending as household income increases or decreases due to the changes in production).

Land Tenure: To improve the manageability of the Bureau of Land Management (BLM) lands and improve their usefulness to the public, the BLM has numerous authorities for "repositioning" lands into a more consolidated pattern, disposing of lands, and entering into cooperative management agreements. These land-pattern improvements are completed primarily through the use of land exchanges, but also through land sales, jurisdictional transfers to other agencies, and through the use of cooperative management agreements and leases. These ownership or jurisdictional changes are referred as "Land Tenure Adjustments."

Leasable Minerals: Those minerals or materials subject to lease by the federal government under the Mineral Leasing Act of 1920. They include coal, phosphate, asphalt, sulphur, potassium, and sodium minerals; oil and gas, as well as geothermal resources.

Locatable Minerals: Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of metallic minerals such as gold, silver, and other uncommon materials not subject to lease or sale.

Mineral Materials (Salables): Materials such as common varieties of sand, stone, gravel, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws, but can be acquired under the Mineral Materials Act of 1947, as amended.

Mineral Withdrawal: A formal order that withholds federal lands and minerals from entry under the Mining Law of 1872, as amended, and closes the area to mineral location (i.e., staking mining claims) and development.

Mitigation:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

(e) Compensating for the impact by replacing or providing substitute resources or environments.

Multiple Use Reservoir: A human-created lake or pond with a combination of balanced uses, including, but not limited to, recreation, livestock watering, watershed health, and wildlife and fish.

Native Species Status: Native Species Status (NSS) refers to the population status of species native to the area in which their habitats occur. The NSSs are divided into the following categories:

NSS1 Native Species Status 1

- Populations are greatly restricted or declining, extirpation appears possible; or ongoing significant loss of habitat.

NSS2 Native Species Status 2

- Populations are declining, extirpation appears possible; habitat is restricted or vulnerable, but no recent or ongoing significant loss; species may be sensitive to human disturbance
  OR
- Populations are declining or restricted in numbers and (or) distribution, extirpation is not imminent; ongoing significant loss of habitat.

NSS3 Native Species Status 3

- Populations are greatly restricted or declining, extirpation appears possible; habitat is not restricted, vulnerable, but no loss; species is not sensitive to human disturbance
  OR
- Populations are declining or restricted in numbers and (or) distribution, extirpation is not imminent; habitat is restricted or vulnerable, but no recent or ongoing significant loss species may be sensitive to human disturbance.
  OR
- Species is widely distributed; population status or trends are unknown, but are suspected to be stable; ongoing significant loss of habitat.

NSS4 Native Species Status 4

- Populations are greatly restricted or declining, extirpation appears possible; habitat is stable and not restricted
  OR
- Populations are declining or restricted in numbers and (or) distribution, extirpation is not imminent; habitat is not restricted, vulnerable, but no loss; species is not sensitive to human disturbance
  OR
- Species is widely distributed, population status or trends are unknown, but are suspected to be stable; habitat is restricted or vulnerable, but no recent or ongoing significant loss; species may be sensitive to human disturbance
  OR
- Populations that are stable or increasing and not restricted in numbers and (or) distribution; ongoing significant loss of habitat.

Necessary Tasks (Clause): Work requiring the use of motor vehicles. Examples include using motor vehicles to repair range improvements, manage livestock, perform geophysical exploration activities and other types of leasable mineral exploration activity (other than casual use), and performing mining claim functions resulting in less than 5 acres of surface disturbance as described in 43 CFR 3809.

No Surface Occupancy (NSO): The term "no surface occupancy" (NSO) is used in two ways. It is used in one way to define a NSO area where no surface-disturbing activities of any nature or for any purpose would be allowed. For example, construction or the permanent or long-term placement of structures or other facilities for any purpose would be prohibited in an NSO area.

The other way the "no surface occupancy" term is used is as a stipulation or mitigation requirement for controlling or prohibiting selected land uses or activities that would conflict with other activities, uses, or values in a given area. When used in this way, the NSO stipulation or mitigation requirement is applied to prohibit one or more specific types of land and resource development activities or surface uses in an area, while other—perhaps even similar—types of activities or uses (for other purposes) would be allowed. For example, protecting important rock art relics from destruction may require closing the area to the staking of mining claims and surface mining, off-road vehicle travel, construction or long-term placement of structures or pipelines, powerlines, general purpose roads, and livestock grazing. Conversely, the construction of fences to protect the rock art from vandalism or from trampling or breakage by livestock, an access road or trail, and other visitor facilities to provide interpretation and opportunity for public enjoyment of the rock art would be allowed. Further, if there were interest in development of leasable minerals in the area, leases for oil and gas, coal, and so forth, could be issued with a "no surface occupancy" stipulation or mitigation requirement for the rock art site, which would still allow access to the leasable minerals from adjacent lands and underground.

The term "no surface occupancy" has no relationship or relevance to the presence of people in an area.

Objective: A description of a desired condition for a resource. Objectives can be quantified and measured and, where possible, have established timeframes for achievement.

Open: Generally denotes that an area is available for a particular use or uses. Refer to specific program definitions found in law, regulations, or policy guidance for application to individual programs.

Off-Highway Vehicle (OHV): Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding (1) any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used in times of national defense emergencies.

Off-Highway Vehicle (OHV) Management Designations: Designations apply to all off-road vehicles (ORVs) regardless of the purposes for which they are being used. Emergency vehicles are excluded. The ORV designation definitions have been developed in cooperation with representatives of the U.S. Forest Service, National Park Service, and the Bureau of Land Management (BLM) state and field office personnel. The BLM recognizes the differences between ORVs and over-snow vehicles in terms of use and impact. Therefore, travel by over-snow vehicles will be permitted off existing routes and in all open or limited areas (unless otherwise specifically limited or closed to over-snow vehicles) if they are operated in a responsible manner without damaging the vegetation or harming wildlife.

> **Closed:** Vehicle travel is prohibited in the area. Access by means other than motorized vehicle is permitted. This designation is used if closure to all vehicular use is necessary to protect resources, to ensure visitor safety, or to reduce conflicts.
>
> **Open:** Vehicle travel is permitted in the area (both on and off roads) if the vehicle is operated responsibly in a manner not causing, or unlikely to cause, significant undue damage to or disturbance of the soil, wildlife, wildlife habitats, improvements, cultural or vegetative resources,

or other authorized uses of the public lands. These areas are used for intensive OHV use where there are no compelling resource needs, user conflicts, or public safety issues to warrant limiting cross-country travel.

Limited:

(a) Vehicle travel is permitted only on roads and vehicle routes which were in existence prior to the date of designation in the *Federal Register*. Vehicle travel off of existing vehicle routes is permitted only to accomplish necessary tasks and only if such travel does not result in resource damage. Random travel from existing vehicle routes is not allowed. Creation of new routes or extensions and (or) widening of existing routes are not allowed without prior written agency approval.

(b) Vehicle travel is permitted only on roads and vehicle routes designated by the BLM. In areas where final designation has not been completed, vehicle travel is limited to existing roads and vehicle routes as described above. Designations are posted as follows:

1. Vehicle route is open to vehicular travel.
2. Vehicle route is closed to vehicular travel.

(c) Vehicle travel is limited by number or type of vehicle. Designations are posted as follows:

1. Vehicle route limited to four-wheel drive vehicles only.
2. Vehicle route limited to motorbikes only.
3. Area is closed to over-snow vehicles.

(d) Vehicle travel is limited to licensed or permitted use.

(e) Vehicle travel is limited to time or season of use.

(f) Where specialized restrictions are necessary to meet resource management objectives, other limitations also may be developed.

The BLM may place other limitations, as necessary, to protect other resources, particularly in areas that motorized OHV enthusiasts use intensely or where they participate in competitive events.

Overgrazing: Continued heavy grazing that exceeds the recovery capacity of the forage plants and creates deterioration of the grazing lands (Valentine 1990).

Perennial Stream: A stream that flows continuously. Perennial streams generally are associated with a water table in the localities through which they flow (Prichard et al. 1998).

Pest: With the exception of vascular plants classified as invasive nonnative plant species, a pest can be any biological life form that poses a threat to human or ecological health and welfare. For the purposes of this planning effort, an "animal pest" is any vertebrate or invertebrate animal subject to control by Animal and Plant Health Inspection Service (APHIS). APHIS is currently BLM's authorized agent for controlling "animal pests." For this reason, "animal pests" will be considered a subset of Pest.

Planning Area: A geographic area for which land use and resource management plans are developed and maintained.

Prescribed Burning: Controlled application of fire to wildland fuels in either their natural or modified state under specified environmental conditions that allow the fire to be confined to a predetermined area and at the same time to produce the fire intensity and rate of spread required to attain planned resource management objectives.

Prescribed Fire: The introduction of fire to an area under regulated conditions for specific management purposes.

Priority Fish Species: Priority fish species are species considered to be sport fish and native species.

Probable Fossil Yield Classification: Geologic units in the planning area are classified according to the Probable Fossil Yield Classification, usually at the formation or member level, according to the probability of yielding resources of concern to land managers, primarily vertebrate fossils. The classification uses a ranking of 1 through 5, with Class 5 assigned to units with a high potential for fossils. Within the planning area, Class 4 and Class 5 geologic formations account for approximately 50 percent of the total acreage, including all ownerships. About 35 percent of public land in the planning area is underlain by Class 4 and Class 5 formations. The classifications are described as below.

Class 1. Igneous and metamorphic geologic units, or units with highly disturbed preservational environments that are not likely to contain recognizable fossil remains. Management concern is negligible for Class 1 resources and mitigation requirements are rare.

Class 2. Sedimentary geologic units that are not likely to contain vertebrate fossils or significant nonvertebrate fossils. Management concern is low for Class 2 resources and mitigation requirements are not likely.

Class 3. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence, or units of unknown fossil potential. Management concern may extend across the entire range of management. Ground-disturbing activities require sufficient assessment to determine whether significant resources occur in the area of the proposed action.

Class 4. Class 4 units are Class 5 units with a lowered risk of human-caused adverse impacts or lowered risk of natural degradation. Ground-disturbing activities require assessment to determine whether significant resources occur in the area of the proposed action and whether those actions will impact the resource. Mitigation may include full monitoring of significant localities.

Class 5. Highly fossiliferous geologic units that regularly produce vertebrate fossils or significant nonvertebrate fossils and that are at risk of natural degradation or human-caused adverse impacts. Class 5 areas receive the highest level of management focus. Mitigation of ground-disturbing actions is required and may be intense. Areas of special interest may be designated and intensely managed.

Produced Water: Groundwater removed to facilitate the extraction of minerals, such as coal, oil, or gas.

Proper Grazing: Proper grazing is the practice of managing forage use by grazing animals at a sustainable level that maintains rangeland health. Proper grazing will maintain or increase plant cover, including residue, which acts to slow down or reduce runoff, increase water infiltration, and keep erosion and sedimentation at or above acceptable levels within the potential of ecological sites within a given geographic area (e.g., watershed, grazing allotment, etc.).

Rangeland: Land on which the native vegetation is predominantly grasses, grass-like plants, forbs, or shrubs suitable for grazing or browsing. This includes lands revegetated naturally or artificially when routine management of that vegetation is accomplished mainly through manipulation of grazing. Rangelands include natural grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows.

Rangeland Health: The degree to which the integrity of the soil and ecological processes of rangeland ecosystems are sustained.

Range Improvement Project: A structural improvement requiring placement or construction to facilitate management or control distribution and movement of grazing or browsing animals. Such improvements may include, but are not limited to, fences, wells, troughs, reservoirs, water catchments, pipelines, and cattleguards. The project also may include a practice or treatment which improves rangeland condition and or resource production for multiple use. Nonstructural types of projects may include, but are not limited to, seeding and plant control through chemical, mechanical, and biological means or prescribed burning.

Raptor: Bird of prey with sharp talons and a strongly curved beak, such as hawks, falcons, owls, vultures, and eagles.

Recreation Management Areas: Recreation management areas are units within a planning area guiding recreation management on public lands having similar recreation related issues and concerns. There are two types of recreation management areas, extensive and special.

> **Extensive Recreation Management Areas (ERMA):** These are areas where dispersed recreation is encouraged and where visitors have a freedom of recreational choice with minimal regulatory constraint.
>
> **Special Recreation Management Areas (SRMA):** These are areas where congressionally recognized recreation values exist or where significant public recreation issues or management concerns occur. Special or more intensive types of management are typically needed.

Restricted Disposal: Parcels identified for restricted disposal may be disposed of under the Recreation and Public Purposes Act, by exchange, may limit the disposal to a particular type of entity capable of preserving the resource values, or may include the use of covenants in the deed or land sale patent to ensure the resource values are protected.

Riparian/Wetland Functionality Classification:

> **Desired Plant Community (DPC):** Of the several plant communities that may occupy a site, the DPC is the community that has been identified through a management plan to best meet the plan's objectives for the site. At a minimum, it must protect the site.
>
> **Functional-At-Risk (FAR):** Riparian/wetland areas that are in functional condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation.
>
> **Potential Natural Community (PNC):** The biotic community that would become established if all successional sequences were completed without interference by humans under the present environmental conditions. Natural disturbances are inherent in development. PNCs can include naturalized nonnative species.
>
> **Proper Functioning Condition (PFC):** A riparian or wetland area is considered to be in proper functioning condition when adequate vegetation, landform, or large woody debris is present to do the following:
>
> - Dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality

- Filter sediment, capture bedload, and aid floodplain development
- Improve floodwater retention and groundwater recharge
- Develop root masses that stabilize streambanks against cutting action
- Develop diverse ponding and channel characteristics to provide the habitats and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses
- Support greater biodiversity.

Nonfunctional: Riparian or wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows and thus are not reducing erosion, improving water quality, and so on, as listed above. The absence of certain physical attributes, such as a floodplain where one should be, are indicators of nonfunctioning conditions.

Unknown: Riparian or wetland areas that the Bureau of Land Management lacks sufficient information on to make any form of determination.

Rights-of-Way (ROW): A ROW grant is an authorization to use a specific piece of public land for a specific project, such as roads, pipelines, transmission lines, and communication sites. The grant authorizes rights and privileges for a specific use of the land for a specific period of time.

ROW Avoidance Areas: Areas where negative routing factors exist. ROWs either will not be granted in these areas, or—if granted—will be subject to stringent terms and conditions. In other words, ROWs would be *restricted* (but not necessarily prohibited) in these avoidance areas.

Saleable Minerals: Common variety of minerals on public lands, such as sand and gravel, used mainly for construction. Saleable minerals are disposed of by sales to the public or free-use permits to government agencies or nonprofit organizations.

Seasonal Ranges: The Wyoming Game and Fish Department has identified various ranges for big game species. These ranges are defined as follows:

Summer or Spring-Summer-Fall: A population or portion of a population of animals uses the documented habitats within this range annually from the end of previous winter to the onset of persistent winter conditions.

Severe Winter Relief: A documented survival range, which may or may not be considered a crucial range area as defined above. It is used to a great extent, but only in extremely severe winters. It may lack habitat characteristics that would make it attractive or capable of supporting major portions of the population during normal years, but is used by and allows at least a significant portion of the population to survive the occasional extremely severe winter.

Winter: A population or portion of a population of animals annually uses the documented suitable habitat sites within this range in substantial numbers during the winter period only.

Winter/Year-long: A population or a portion of a population of animals makes general use of the documented suitable habitat sites within this range on a year-round basis. During the winter months there is a significant influx of additional animals into the area from other seasonal ranges.

Year-long: A population or substantial portion of a population of animals makes general use of the suitable documented habitat sites within the range on a year-round basis. On occasion, animals may leave the area under severe conditions.

Parturition Areas: Documented birthing areas commonly used by females. They include calving areas, fawning areas, and lambing grounds. These areas may be used as nurseries by some big game species.

Section 106 of National Historic Preservation Act: "The head of any Federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking in any state and the head of any federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking" (16 U.S.C. 47 df).

Sensitive Sites or Resources: Sensitive sites or resources refer to significant cultural resources that are or may be eligible for nomination to the National Register of Historic Places.

Sensitive Species: Species designated as sensitive by the Bureau of Land Management (BLM) State Director include species that are under status review, have small or declining populations, live in unique habitats, or require special management. BLM Manual 6840 provides policy and guidance for special status species management. The BLM Wyoming Sensitive Species Policy and List are provided in a memorandum updated annually. Primary goals of the BLM Wyoming policy include maintaining vulnerable species and habitat components in functional BLM ecosystems and preventing a need for species listing under the Endangered Species Act.

Seral Stage: One of a series of plant communities that follows another in time on a specific ecological site.

Setting: Setting is the physical environment of a historic property and how the property evokes a sense of feeling and association with past events. Accordingly, setting referees to the **character** of the place in which the property played its historic role. It involves **how**, not just where, the property is situated and its relationship to surrounding features and open space. These features and their relationships should be considered not only within the exact boundaries of the property, but also between the property and its surroundings.

Special Recreation Management Areas (SRMA): These are areas where congressionally recognized recreation values exist or where significant public recreation issues or management concerns occur. Special or more intensive types of management are typically needed.

Special Status Species: Special status species are species proposed for listing, officially listed as threatened or endangered, or are candidates for listing as threatened or endangered under the provisions of the endangered species act; those listed by a state in a category such as threatened or endangered implying potential endangerment or extinction; and those designated by the State Director as sensitive (BLM 6840 Manual 2001).

Split-Estate: Surface land and mineral estate of a given area under different ownerships. Frequently, the surface will be privately owned and the minerals federally owned.

State-Listed Species: Species proposed for listing or listed by a state in a category implying, but not limited to, potential endangerment or extinction. Listing is either by legislation or regulation.

Surface-disturbing Activities (or Surface Disturbance): The physical disturbance and movement or removal of land surface and vegetation. These activities range from the very minimal to the maximum types of surface disturbance associated with such things as off-road vehicle travel or use of mechanized, rubber-tired, or tracked equipment and vehicles; some timber cutting and forest silvicultural practices; excavation and development activities associated with use of heavy equipment for road, pipeline, power line and other types of construction; blasting; strip, pit, and underground mining and related activities, including ancillary facility construction; oil and gas well drilling and field construction or development and related activities; range improvement project construction; and recreation site construction. *The Wyoming State Office currently is revising this definition.*

Surface Water Classes and Uses: The following water classes are a hierarchical categorization of waters according to existing and designated uses. Except for Class 1 waters, each classification is protected for its specified uses plus all the uses contained in each lower classification. Class 1 designations are based on value determinations rather than use support and are protected for all uses in existence at the time of or after designation. There are four major classes of surface water in Wyoming with various subcategories within each class (see "Wyoming Surface Water Classification List" for current listing).

(a) Class 1, Outstanding Waters. Class 1 waters are those surface waters in which no further water quality degradation by point source discharges other than from dams will be allowed. Nonpoint sources of pollution shall be controlled through implementation of appropriate best management practices. Pursuant to Section 7 of these regulations, the water quality and physical and biological integrity that existed on the water at the time of designation will be maintained and protected. In designating Class 1 waters, the Environmental Quality Council shall consider water quality, aesthetic, scenic, recreational, ecological, agricultural, botanical, zoological, municipal, industrial, historical, geological, cultural, archeological, fish and wildlife, the presence of substantial quantities of developable water, and other values of present and future benefit to the people.

(b) Class 2, Fisheries and Drinking Water. Class 2 waters are waters, other than those designated as Class 1 that are known to support fish or drinking water supplies or where those uses are attainable. Class 2 waters may be perennial, intermittent, or ephemeral and are protected for the uses indicated in each subcategory listed below. Five subcategories of Class 2 waters exist.

(c) Class 3, Aquatic Life Other than Fish. Class 3 waters are waters other than those designated as Class 1 that are intermittent, ephemeral, or isolated waters, and because of natural habitat conditions, do not support nor have the potential to support fish populations or spawning or certain perennial waters that lack the natural water quality to support fish (e.g., geothermal areas). Class 3 waters provide support for invertebrates, amphibians, or other flora and fauna that inhabit waters of the state at some stage of their life-cycles. Uses designated on Class 3 waters include aquatic life other than fish, recreation, wildlife, industry, agriculture, and scenic value. Generally, waters suitable for this classification have wetland characteristics; and such characteristics will be a primary indicator used in identifying Class 3 waters. There are four subcategories of Class 3 waters.

(d) Class 4, Agriculture, Industry, Recreation, and Wildlife. Class 4 waters are waters other than those designated as Class 1 where it has been determined that aquatic life uses are not attainable pursuant to the provisions of Section 33 of these regulations. Uses designated on Class 4 waters include recreation, wildlife, industry, agriculture and scenic value. (Source: WDEQ, Wyoming Surface Water Quality Standards)

Vegetative Diversity: The variety of vegetative types in an area, including species, the genetic differences among species and populations, the communities and ecosystems in which vegetation types occur, and the structure and seral stage of these communities. Vegetative diversity includes rare as well as common vegetative types, and typically supports a diverse array of animal species and communities.

Viewshed: Viewshed is used in Visual Resource Management to describe "...landscape that can be seen under favorable atmospheric conditions from a viewpoint (key observation point) or along a transportation corridor" (BLM 1984).

Visual Resources: The visible physical features of a landscape (topography, water, vegetation, animals, structures, and other features) that constitute the scenery of an area.

Visual Resource Management (VRM) Classes:

Class I. The objective of this class is to maintain a landscape setting that appears unaltered by humans. It is applied to wilderness areas, some natural areas, wild portions of wild and scenic rivers, and other similar situations in which management activities are to be restricted.

Class II. The objective of this class is to design proposed alterations so as to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III. The objective of this class is to design proposed alterations so as to partially retain the existing character of the landscape. Contrasts to the basic elements (form, line, color, and texture) caused by a management activity may be evident and begin to attract attention in the characteristic landscape; however, the changes should remain subordinate to the existing characteristic landscape.

Class IV. The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. Contrasts may attract attention and be a dominant feature of the landscape in terms of scale; however, changes should repeat the basic elements (form, line, color, and texture) inherent in the characteristic landscape.

Rehabilitation Area. Change is needed or change may add acceptable visual variety to an area. This class applies to areas where the naturalistic character has been disturbed to a point at which rehabilitation is needed to bring it back into character with the surrounding landscape. This class would apply to areas identified in the scenic evaluation where the quality class has been reduced because of unacceptable cultural modification. The contrast is inharmonious with the characteristic landscape. It may also be applied to areas that have the potential for enhancement; i.e., add acceptable visual variety to an area or site. It should be considered an interim or short-term classification until one of the other VRM class objectives can be reached through rehabilitation or enhancement. The desired visual resource management class should be identified.

Wildfire: Any natural fire ignition occurring on wildland that neither meets management objectives nor occurs within a prescribed fire area, thus requiring a suppression response.

Wildland Urban Interface (WUI): Healthy Forest Recreation Act 2003: defines wildland urban interface (WUI) (section 101) as an area within or adjacent to an at risk community that has been

identified by a community in it's wildfire protection plan or, for areas that do not have such a plan, an area extending; 1) ½ mile from the boundary of an at risk community, or 2) 1 ½ miles when other criteria are met. (e.g., a sustained steep slope or a geographic feature aiding in creating an effective fire break or is condition class III land, or 3) is adjacent to an evacuation route.

Wildlife-Disturbing Activity: Authorized activities that may cause displacement of or excessive stress to wildlife during critical life stages. Wildlife-disturbing activities includes human presence, noise, and activities using motorized vehicles or equipment.

Withdrawal: Removal or withholding of public lands, by statute or Secretarial order, from operation of some or all of the public land laws. A mineral withdrawal includes public lands potentially valuable for leasable minerals, precluding the disposal of the lands except with a mineral reservation clause, unless the lands are found not to contain a valuable deposit of minerals. A mineral withdrawal is the closing of an area to mineral location and development activities.

Yellowcake: Yellowcake is the product of the uranium extraction (milling) process. Early production methods resulted in a bright yellow compound, hence the name yellowcake. The material is a mixture of uranium oxides that can vary in proportion and color from yellow to orange to dark green (blackish), depending at which temperature the material was dried (level of hydration and impurities). Higher drying temperatures produce a darker, less soluble material. Yellowcake is commonly referred to as U_3O_8 and is assayed as pounds U_3O_8 equivalent. This fine powder is packaged in drums and sent to a conversion plant that produces uranium hexafluoride as the next step in the manufacture of nuclear fuel.

References:

BLM (Bureau of Land Management). 1984. Visual Resource Management. BLM Manual 8400.

BLM. 2001. Special Status Species Management. BLM Manual 6840 .

EnCana. 2005. Carbon Dioxide Miscible Flood. Accessed at: http://www.encana.com/operations/technology/ot_co2_miscible_flood.html.

Prichard, D., J. Anderson, C. Correll, J. Fogg, K. Gebhardt, R. Krapf, S. Leonard, B. Mitchell, and J. Staats. 1998. Riparian Area Management: A User Guide to Assessing Proper Functioning Condition and Supporting Science for Lotic Areas. U.S. Department of the Interior, Bureau of Land Management, U.S. Department of Agriculture, Forest Service, and Natural Resources Conservation Service Technical Reference 1737-15.

Valentine, J.F. 1990. *Grazing Management.* San Diego, CA: Academic Press, Inc.

WDEQ (Wyoming Department of Environmental Quality). Wyoming Surface Water Quality Standards.

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